

## **APPENDIX 5**

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### **Traffic Study Update**

# City of Placentia

## GENERAL PLAN MOBILITY ELEMENT UPDATE TECHNICAL TRAFFIC STUDY

JULY 2018

Prepared for:

**City of Placentia**

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JB73145

July 27, 2018

Mr. Luis Estevez  
Director of Public Works  
City of Placentia  
401 E. Chapman Avenue  
Placentia, CA 92870

Subject: General Plan Mobility Element Update Technical Traffic Study for the City of Placentia

Dear Mr. Luis Estevez:

KOA Corporation is pleased to present the attached General Plan Mobility Element Update Technical Traffic Study for the City of Placentia.

KOA prepared the General Plan traffic study for the City of Placentia back in 2014. To support the City's current General Plan update effort, KOA conducted the traffic impact study for the updates of the Mobility Element. The main assumptions, methodologies and conclusions of our study are summarized in this report.

Please contact our office if you have any questions about the report, or if you need additional information regarding the study. If there are any comments that require response or revisions, please notify our office as soon as possible for prompt revision.

It has been a pleasure to prepare this study for the City of Placentia.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Min Zhou', with a long horizontal flourish extending to the right.

Min Zhou, PE  
Vice President

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## 1.0 EXECUTIVE SUMMARY

The Mobility Element technical traffic study for the Placentia General Plan Update includes the analysis of existing and future conditions at 42 City intersections and 62 roadway segments. The study presents an analysis of the potential traffic impacts of two alternative land use plans: the "Current General Plan" scenario and the "Proposed General Plan" scenario. The Current General Plan scenario is consistent with the land use forecast assumed in the official Orange County projections (Orange County Projections 2014, or OCP-2014), and the latest version of the Orange County Traffic Analysis Model (OCTAM version 4.0). The Proposed General Plan scenario has revised land use in some parcels based on the recent land use information provided by the City. Figure 1-1 provides a map of the study intersections and street segments.

Traffic counts collected in 2016 were used to evaluate existing conditions. The OCTAM version 4.0 was used to provide the baseline travel demand forecasts for the Current General Plan scenario. For the Proposed General Plan scenario, increased/decreased trips for the parcels with revised land use were estimated by using the Institute of Traffic Engineer (ITE) rates (10<sup>th</sup> Edition), and trip distribution and assignment assumptions based on the roadway network and types of the land use.

Traffic conditions for Placentia intersections were then evaluated using both the Intersection Capacity Utilization (ICU) technique and the Highway Capacity Manual (HCM) 2010 methodologies.

The analysis determined that existing traffic conditions for the majority of the City's roadways are generally good, with most streets and intersections currently having good to excellent levels-of-service (A or B). However, as of 2017, two roadway segments, operates at unacceptable levels-of-service (LOS) value of E under the existing conditions:

- Kraemer Boulevard between South City Limit to Orangethorpe Avenue
- Rose Drive between City Limit South of Golden Avenue to North City Limit

The following two signalized study intersections are operating at unacceptable LOS values of E or F under the existing conditions:

- Morse Avenue at Kraemer Boulevard during the AM peak hour
- Madison Avenue at Kraemer Boulevard during the AM peak hour

Under the Current General Plan (Year 2040) conditions, all except five of the City's roadway segments are expected to operate at unacceptable levels with existing roadway configuration and capacity. The following five roadway segments are expected to operate at LOS values of E or F:

- Chapman Avenue, from Placentia Avenue to Bradford Avenue
- Placentia Avenue, from Chapman Avenue to Primrose Avenue
- Kraemer Boulevard, from South City Limit to Orangethorpe Avenue
- Rose Drive, from Alta Vista Street to Palm Drive
- Rose Drive, from City Limit south of Colden Avenue to North City Limit

The majority of the City's intersections are also expected to operate at acceptable levels of service under the Current General Plan scenario, with existing intersection geometry. The following six intersections are, however, expected to operate at unacceptable LOS E or F conditions:

- Rose Drive at Imperial Highway during both the AM and PM peak hour
- Morse Avenue at Kraemer Boulevard during the AM peak hour
- Palm Drive at Rose Drive during the AM peak hour



- Kraemer Boulevard at Chapman Avenue during the PM peak hour
- SR-57 NB Ramps at Orangethorpe Avenue during the PM peak hour
- Melrose Street at Orangethorpe Avenue during the PM peak hour

Under the Proposed General Plan (Year 2040) conditions, the same five roadway segments are expected to operate below acceptable levels of service as those under the Current General Plan scenario.

The majority of the City's intersections are still expected to operate at acceptable levels of service under the Proposed General Plan scenario; however, the following five intersections are expected to operate at unacceptable LOS E or F conditions:

- Rose Drive at Imperial Highway during both the AM and PM peak hour
- Morse Avenue at Kraemer Boulevard during the AM peak hour
- Kraemer Boulevard at Chapman Avenue during the PM peak hour
- SR-57 NB Ramps at Orangethorpe Avenue during the PM peak hour
- Melrose Street at Orangethorpe Avenue during the PM peak hour

To improve operating conditions on the City's roadways and at intersections affected by regional traffic growth and changes in local land use, improvements to the roadways are recommended. The recommended improvements generally involve upgrading the facilities to be consistent with the Orange County Master Plan of Arterial Highways (MPAH). In most cases, the improvements may only involve restriping. The following five roadways need to be improved based on both the Current General Plan and Proposed General Plan conditions applied to the existing roadway configurations:

- Chapman Avenue, from Placentia Avenue to Bradford Avenue  
Improve to a 4-lane divided Primary Arterial configuration (its MPAH classification).
- Placentia Avenue, from Chapman Avenue to Primrose Avenue  
Improve to a 4-lane divided Primary Arterial configuration (consistent with its MPAH classification).
- Kraemer Boulevard, from South City Limit to Orangethorpe Avenue  
Improve to a 6-lane divided Major Arterial configuration (consistent with its MPAH classification).
- Rose Drive, from Alta Vista Street to Palm Drive  
Improve to a 6-lane divided Major Arterial configuration (its MPAH classification).
- Rose Drive, from City Limit south of Colden Avenue to North City Limit  
Improve to a 6-lane divided Major Arterial configuration (its MPAH classification).

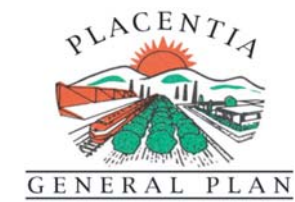
Improvements to six intersections are recommended under the Current General Plan scenario. Improvements generally involve changes to traffic control at the intersection, and/or changes in lane configuration either through restriping or constructing new travel lanes:

- Rose Drive at Imperial Highway
  - Install westbound right-turn overlap traffic signal phasing
  - Optimize signal timing
- Kraemer Boulevard at Morse Avenue
  - Restripe the left-through lane to left-turn only lane
  - Restripe the right-turn only lane to through-right turn lane

- Rose Drive at Palm Drive
  - Restripe the southbound approaches to the following configuration: 1 left-turn only lane, 2 through lanes and 1 through-right turn lane
  
- Chapman Avenue at Kraemer Boulevard
  - Northbound left-turn phasing changed from protected to protected and permissive
  
- Orangethorpe Avenue at SR-57 Northbound Ramps
  - Restripe the Northbound Off Ramp to the following configuration: 1 left-turn only lane, 1 left-right shared lane and 1 right-turn only lane
  
- Orangethorpe Avenue at Melrose Street
  - Northbound left-turn phasing changed from protected to protected and permissive

Complete descriptions of the proposed recommendations can be found in Section 6 of this document.

The report presents our complete findings, analysis, and recommendations for the Placentia General Plan Circulation Element Update Technical Traffic Study. Recommendations made as part of this study are intended to help the City to plan for the traffic needs of the proposed General Plan land use development.



**CITY of PLACENTIA  
General Plan Update**

**Study Area**

**Legend**

- Placentia City Limits
- ++++ Railroad
- # Study Intersections

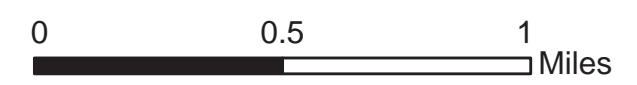
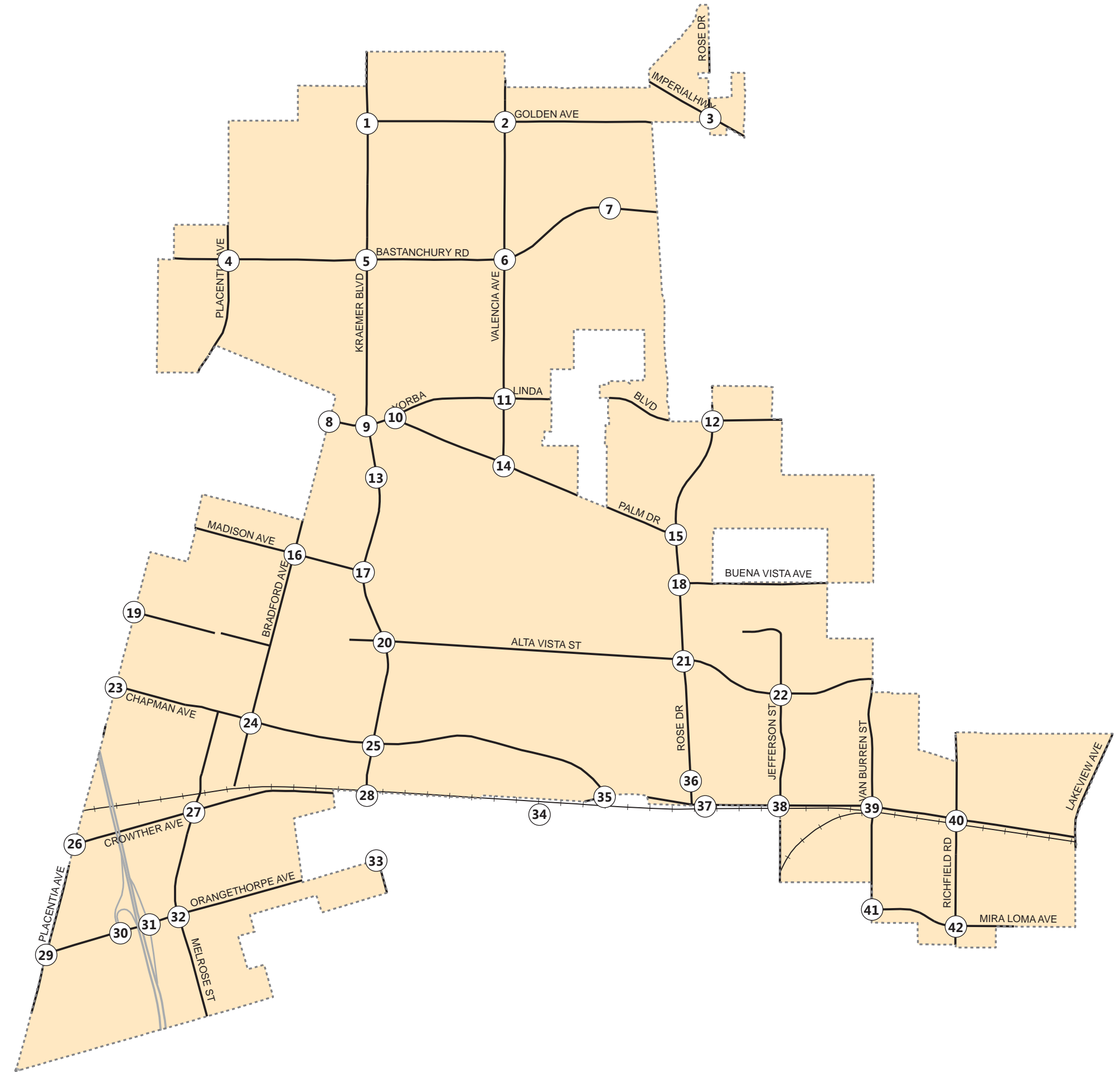


Figure 1-1

## 2.0 INTRODUCTION & ANALYSIS METHODOLOGY

### 2.1 BACKGROUND

The Mobility Element of the General Plan represents the City's overall transportation plan. The transportation plan includes both the physical transportation system itself such as streets, highways, rail lines, bicycle routes and sidewalks, as well as the various modes of transportation such as cars, buses, trucks, trains, bicycles, ridesharing and walking using these facilities. These various modes of transportation provided for the movement of people, goods, and products throughout the City. The circulation and transportation system provides a vital role in shaping the overall form and structure of the City, in that it connects various parts of the City internally as well as with the surrounding region.

In addition to the traditional vehicular transportation planning needs of the General Plan, the Mobility Element also addresses alternate transit modes, pedestrians, and bicycles to the level that recognizes the City's commitment toward sustainability as outlined in the Sustainable Communities and Climate Protection Act of 2008 (SB 375) and SB 743, which mandates a change in the way that public agencies evaluate transportation impacts of projects under CEQA. Consideration of the complete streets philosophy outlined in SB 375 is therefore incorporated into the updated Mobility Element.

The Mobility Element is related to the Land Use Element, since the circulation system must adequately handle future traffic conditions and provide the means to move people and goods through and within the City of Placentia.



Placentia Library

The Cities of

Placentia, Brea and Yorba Linda are known collectively as the Tri-City Area, cooperating on major transportation and land use issues. In addition, Placentia shares its borders with the City of Fullerton to the west and Anaheim to the south.

Many of Placentia's arterial roadways extend beyond the City's borders into these neighboring cities and beyond. Land use decisions and traffic patterns in these adjacent cities therefore have the potential to affect the quality of traffic flow and mobility in the City of Placentia, and in turn, traffic conditions and decisions made by the City of Placentia can affect these neighboring cities.

The City of Placentia is served by various major transportation facilities including two State Highways (State Route 57 [the Orange Freeway], and State Route 90 [Imperial Highway]). Major north-south arterials that provide for through travel within and beyond the City of Placentia include Placentia Avenue, Kraemer Boulevard and Rose Drive/Tustin Avenue. All the grade separation projects for all three of these north-south arterials at the BNSF railroad parallel to Orangethorpe Avenue have been completed.

Major east-west arterials that provide for through travel within and beyond the City limits are Imperial Highway, Bastanchury Road, Yorba Linda Boulevard, Chapman Avenue and Orangethorpe Avenue. Imperial Highway, Yorba Linda Boulevard, Chapman Avenue and Orangethorpe Avenue have full interchanges with the SR-57 Freeway.

Minor north-south roadways that provide for essential local circulation but do not provide for through north-south travel include: Bradford Avenue and Melrose Street to the west, Valencia Avenue and Central Avenue in the central part of the City, and Jefferson Street, Van Buren Street and Richfield Road to the east. Minor east-west roadways that provide for local circulation include Golden Avenue to the north, Palm Drive and Madison Avenue in the central part of the City, Buena Vista Avenue, Alta Vista Avenue, and Crowther Avenue to the south.

Placentia also has a major transit provider, the Orange County Transportation Authority (OCTA), and one freight rail line (BNSF). Plans are also underway to begin Metrolink commuter rail service. The Placentia Metrolink station will likely start construction in 2019.

Placentia has an ongoing program to enhance pedestrian facilities with improvements to sidewalks, curb ramps, signage, lighting, and streetscape amenities. The City recognizes that a complete and balanced multi-modal transportation network is critical to meeting the needs of all its citizens and visitors. In meeting these needs the City's goal is to ensure that all users of the transportation system, including bicyclists, pedestrians, transit riders, motorists, children, seniors, and the disabled have transportation options.

## 2.2 DATA COLLECTION AND FIELD REVIEW

The General Plan Mobility Element includes the analysis of existing and future conditions at 42 City intersections and 62 roadway segments. As part of this analysis, peak-hour intersection turning movement counts were collected for 42 intersections in October, 2017. Five intersections in Placentia are currently included in OCTA's Congestion Management Plan (CMP). They are:

- Rose Drive at Imperial Highway
- SR-57 SB Ramps at Orangethorpe Avenue
- SR-57 NB Ramps at Orangethorpe Avenue
- Rose Drive at Del Cerro Drive
- Del Cerro Drive at Orangethorpe Avenue

For these five CMP intersections, the three-day average peak hour traffic counts from OCTA were directly used for level-of-service (LOS) analysis. These counts were collected during various months in 2017.

24-hour daily traffic volumes were collected for all the 62 roadway segments in 2016. A one percent growth rate was applied to the 2016 volumes for the existing year 2017 roadway segment LOS analysis.

Existing roadway segment daily traffic count data sheets are included in Appendix A of this report.

Existing AM and PM peak hour intersection count data sheets are included in Appendix B of this report.

A thorough review of this traffic count data to ensure traffic flow reasonableness was conducted. Additional field data was collected as needed to provide sufficient information on existing conditions for the City roadway network. This review of field conditions included an inventory of roadway geometries, intersection controls, signal phasing, and existing traffic operations and conditions. Field checks and research were conducted on the City's existing transit system, non-motorized system, including pedestrian and bicycle facilities, and freight and passenger rail service.

## 2.3 GENERAL PLAN LAND USE SCENARIOS

Two alternative land use plans were analyzed for the Placentia General Plan Update. These included the "Current General Plan" alternative and the "Proposed General Plan" alternative. The Current General Plan alternative closely adheres to the existing character of land use throughout the City and is consistent with the land use forecast assumed in the official County projections (Orange County Projections 2014, or OCP-2014). The "Current General Plan" scenario is also consistent with the land use assumptions in the latest version of the County traffic model (OCTAM) version 4.0.

The Proposed General Plan land use scenario was developed in terms of revised industrial, residential, commercial square footage and intensity.

## 2.4 TRAFFIC VOLUME FORECAST AND MODELING

In order to evaluate the City's roadway system for necessary improvements or possible reclassification, accurate traffic volume forecasts are essential. The most current version of the Orange County Transportation Authority's (OCTA) traffic analysis model (OCTAM version 4.0) was therefore used to conduct the travel demand forecasts. The OCTAM consists of a 3,142 traffic analysis zone (TAZ) system which encompasses the five-County Southern California region, with the primary focus of the modeling area in Orange County. There are 34 OCTAM traffic analysis zones either wholly or in part within the City of Placentia, together with a detailed highway network to simulate the City's major roadways. OCTAM includes a calibrated base year (2012) model as well as a 2040 horizontal year model.

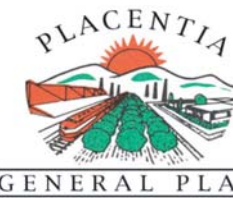
Figure 2-1 on the following page illustrates the traffic analysis zone structure in the City of Placentia. The OCTAM horizontal year 2040 scenario uses the latest adopted demographic forecasts, commonly referred to as OCP-2014. The OCP-2014 demographic forecasts include data in 5-year increments through 2040 and are the official Orange County forecasts. The growth in housing, population, and employment included in the OCP-2014 demographic projections is consistent with the anticipated growth that is expected in conjunction with the cities' General Plan land use and circulation elements. The OCTAM is consistent with the Current General Plan scenario for Placentia. Appendix C shows the base year (2012) and horizontal year 2040 link volumes from the OCTAM version 4.0.

The OCTAM employs the traditional four-step sequential modeling process (trip generation, trip distribution, mode choice, and trip assignment) to develop accurate traffic forecasts for the Orange County area. OCTAM is consistent with the Orange County Master Plan of Arterial Highways (MPAH), the Orange County Long-Range Transportation Plan (LRTP), and the Southern California Association of Governments (SCAG) Transportation Demand Model and Regional Transportation Plan.

To produce the final 2040 future traffic volume forecasts for the Current General Plan land use scenario, a methodology known as NCHRP-765 based on the report Analytic Travel Forecasting Approaches for Project-Level Planning and Design (National Cooperative Highway Research Program Report 765, Transportation Research Board, 2014) was used to adjust existing turning movement volumes based on expected growth in approach volumes as reported by the OCTAM. The General Plan daily traffic volumes were developed in a similar fashion by applying the growth in daily OCTAM volumes to the existing daily traffic volumes.

To be conservative, the future year 2040 intersection volumes were compared to those of existing year with a ten percent total growth rate. If the 2040 volumes were lower, the existing year volume with 10 percent total growth rate will be applied. The OCTAM traffic forecast calculation worksheets for the Current General Plan scenario are included in Appendix D of this report.

The Proposed General Plan scenario was developed based on the latest revised land use information obtained from the City. Appendix E includes zones (group of parcels) where the land use was revised from the Current General Plan to the Proposed General Plan. The net trips generated from the land use changes were calculated based on Institute of Transportation Engineers (ITE) trip rates (10th Edition) and distributed to the roadway network and added to the Current General Plan traffic volumes to represent the Proposed General Plan condition. The traffic generation and distribution assumptions for the Proposed General Plan land use scenario are included in Appendix E.



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OCTAM Traffic Analysis  
Zones for Placentia

Legend

--- Placentia City Limits

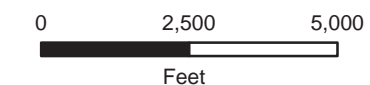
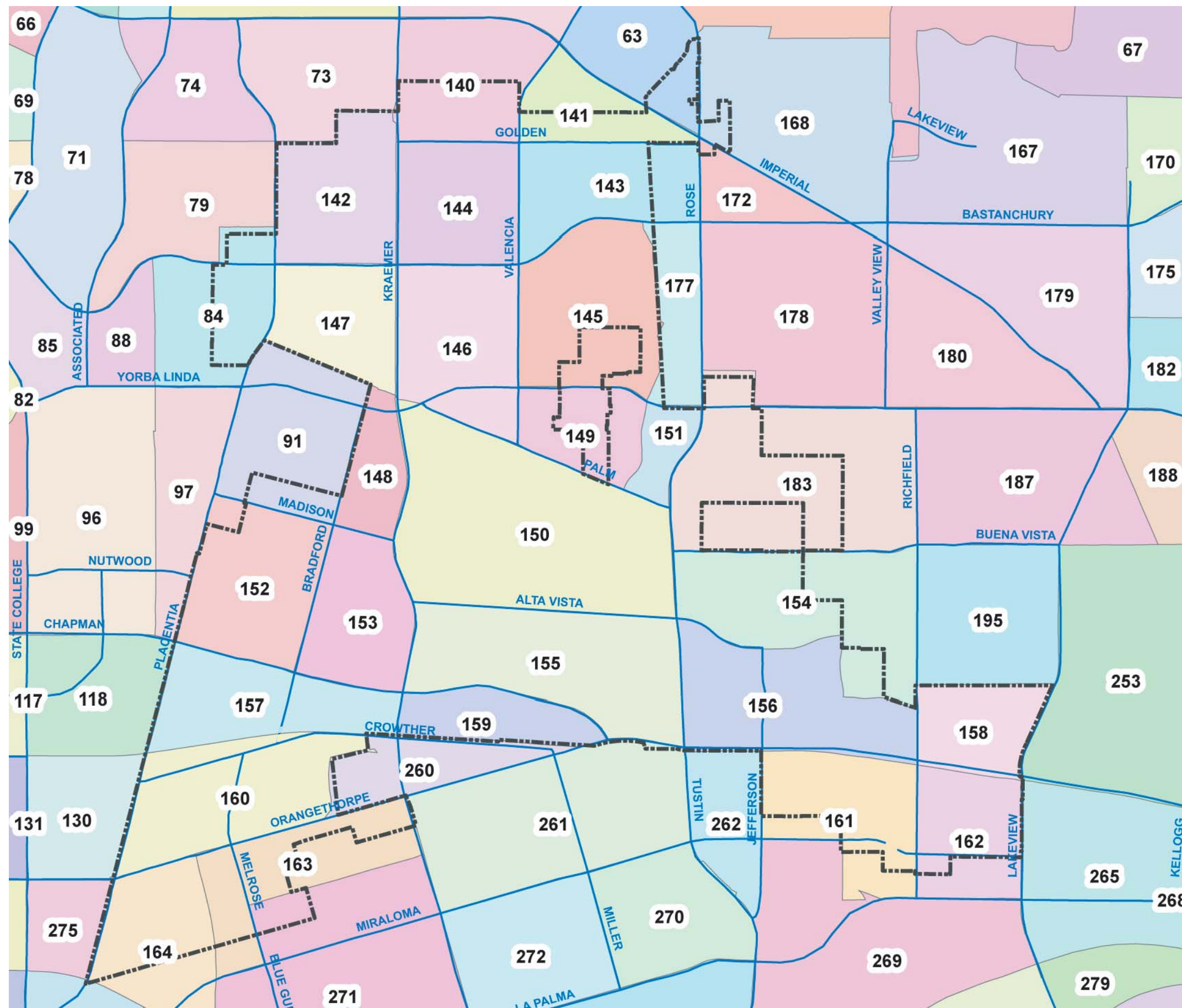


Figure 2-1



## 2.5 LEVEL-OF-SERVICE CRITERIA

Orange County Congestion Management Program (CMP) criteria and the City's traffic study guidelines were used to establish assessment criteria for long-range impacts of the projected growth in the City's planning area. Both the Intersection Capacity Utilization (ICU) and Highway Capacity Manual (HCM) 2010 methodologies were used for the analysis. The City's current General Plan defines level-of-service (LOS) D as an acceptable level-of-service, while Orange County defines LOS E as acceptable for CMP intersections.

### 2.5.1 Roadway Segment Level-of-service Definition

Roadway segment level-of-service or operating conditions is generally defined in terms of a scale ranging from LOS A (free flow) to LOS F (highly congested). Level-of-service is determined by forecasting the expected daily traffic volume for each roadway segment and comparing this volume to the appropriate level-of-service capacity for that roadway classification. The daily traffic volume is forecast based on the County traffic model forecast. Level-of-service criteria for roadway segments was obtained from the document Guidance for Administration of the Orange County Master Plan of Arterial Highways (OCTA, August 14, 2017), as defined in Table 2-1 below.

**TABLE 2-1 – ROADWAY SEGMENT LEVEL-OF-SERVICE DEFINITIONS**

Level of Service	Interpretation
A	LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	LOS C describes stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a volume-to-capacity ratio greater than 1.0.

SOURCE: Guidance for Administration of the Orange County Master Plan of Arterial Highways (OCTA, August 14, 2017)

The MPAH defines the goal for highway design capacity as providing a LOS C or better on arterial highway links. The level-of-service indicators are based on the volume of traffic for designated sections of roadway during a typical day and the practical vehicular capacity of that roadway segment. These indicators are used to illustrate general traffic conditions along the City's roadways. They are not necessarily an indicator of specific operational issues or needs on a specific roadway segment.

For planning purposes the MPAH assigns roadway capacities and level-of-service based on number of lanes and roadway classification. The Circulation Element uses these established maximum roadway capacities along with the roadway daily traffic volumes to determine level-of-service for the roadway segments. Roadway segment level-of-service thresholds based on maximum roadway capacity, number of lanes and roadway classification are shown in Table 2-2.

**TABLE 2-2 – ROADWAY SEGMENT LEVEL-OF-SERVICE (LOS) THRESHOLDS**

Facility Type	Lane Configuration	Levels of Service					
		A	B	C	D	E	F
Principal Arterial	8 Lanes Divided	45,000	52,500	60,000	67,500	75,000	—
Major <sup>1</sup>	6 Lanes Divided	33,900	39,400	45,000	50,600	56,300	—
Primary <sup>2</sup>	4 Lanes Divided	22,500	26,300	30,000	33,800	37,500	—
Secondary	4 Lanes Undivided	15,000	17,500	20,000	22,500	25,000	—
Collector	2 Lanes Undivided	7,500	8,800	10,000	11,300	12,500	—

Note 1: Includes "Modified Major"

Note 2: Includes "Modified Primary"

SOURCE: Guidance for Administration of the Orange County Master Plan of Arterial Highways (OCTA, August 14, 2017)

As indicated, roadway segment level-of-service is based on a range of traffic volumes by functional roadway classification. It indicates the appropriate roadway classification and number of through travel lanes for roadways based upon expected daily usage. Daily roadway capacity and level-of-service is most appropriately used as a screening check to determine the need for more detailed peak hour analysis and to assist in determining the appropriate mitigation measures.

### 2.5.2 Intersection Level-of-service Definition

Intersection operating conditions are typically described in terms of intersection level-of-service. Level-of-service for intersections is a report-card scale used to indicate the quality of traffic flow. Levels-of-service range from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). Brief definitions of intersection Level-of-service are described in Table 2-3.

Traffic conditions in Placentia are evaluated at signalized intersections using a methodology known as the Intersection Capacity Utilization (ICU) technique. This analysis technique is widely accepted by agencies in Southern California, including OCTA and nearby cities. It essentially measures the worst-case sum of traffic volumes for the conflicting movements (i.e., traffic movements that cannot occur at the same time, such as northbound through and southbound left), versus the expected capacity for those movements. This is

the principal analysis method for signalized intersections requested by the City of Placentia. All signalized intersections were therefore analyzed based on this method, with a lane capacity of 1,700 vehicles per hour (vph) per lane and a 5-second loss time.

**TABLE 2-3 – INTERSECTION LEVEL-OF-SERVICE (LOS) DEFINITIONS**

Level of Service	Definition
A	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

SOURCES: Transportation Research Board, *Highway Capacity Manual* (2000); Orange County Transportation Authority, *Orange County Congestion Management Plan* (October 2009)

Signalized intersections were also analyzed using the Highway Capacity Manual (HCM 2010) methodology. The HCM methodology was developed by the Transportation Research Board, a research agency affiliated with the Federal Government. It is based upon techniques which measure control delay for traffic utilizing all approaches to the intersection. Chapter 18 of the HCM is devoted to the analysis of signalized intersections. Intersection average delay is reported for all signalized intersections.

The ICU technique is not applicable to unsignalized or all-way stop (AWS) controlled intersections, therefore all unsignalized and AWS controlled intersections were analyzed using the Highway Capacity Manual, 2010 Edition (HCM 2010) method for unsignalized and AWS intersections (Chapters 19 and 20 of HCM 2010 are devoted to the analysis of unsignalized intersections). Unlike signalized intersections, which are analyzed based on average delay of all traffic movements, analysis of unsignalized intersections is based on the greatest movement delay at the intersection. AWS intersection delay is based on a weighted average delay for all legs of the intersection. Table 2-4 presents the relationship between level-of-service and intersection capacity utilization, and level-of-service and stop delay for signalized intersections, and level-of-service and stop delay for unsignalized intersections.

**TABLE 2-4 – INTERSECTION LEVEL-OF-SERVICE (LOS) THRESHOLDS**

Level-of-service	Intersection Capacity Utilization (ICU)	Signalized Intersection Control Delay (seconds/vehicle)	Unsignalized Intersection Control Delay (seconds/vehicle) <sup>1</sup>
A	0.000–0.600	0 – 10	0 – 10
B	0.601–0.700	10.1 – 20	10.1 – 15
C	0.701–0.800	20.1 – 35	15.1 – 25
D	0.801–0.900	35.1 – 55	25.1 – 35
E	0.901–1.000	55.1 – 80	35.1 – 50
F	> 1.000	More than 80	More than 50

Note 1: Applies to both boulevard stop and all-way stop intersections

SOURCE: Transportation Research Board, *Highway Capacity Manual* (2010)

## 3.0 ROADWAY FUNCTIONAL CLASSIFICATION SYSTEM

### 3.1 ORANGE COUNTY MASTER PLAN OF ARTERIAL HIGHWAYS

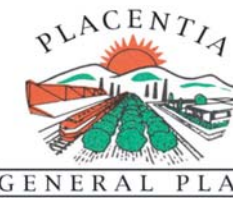
The Orange County Master Plan of Arterial Highways (MPAH) establishes a county-wide surface roadway network intended to provide a guideline for the development of an inter-community arterial highway system to effectively serve existing and future land uses in the County. The MPAH provides a tool for coordination of the transportation and land use planning



and implementation processes engaged in by the various cities, the County, and adjacent jurisdictions. Consistency with the MPAH ensures that each city and the County implement the same base transportation network using similar standards and assumptions. The Orange County 2017 MPAH network is shown on Figure 3-1.

The two principal goals of the MPAH are to provide a County-wide circulation (arterial highway) system to accommodate regional travel demand, and to provide an arterial highway system that supports City and County land use policies. Consistency with the MPAH is required for local agencies to be eligible for Orange County Measure M2 funding. Local agency circulation elements are required to include all roadways that are included on the MPAH, and to be consistent with the functional classifications described in the MPAH and shown on the MPAH map.

MPAH includes six functional classifications of arterial highways including Principal Arterials, Major Arterials, Primary Arterials, Secondary Arterials, Divided Collectors, and Collectors. The MPAH also recognizes Smart Streets as arterials with enhanced traffic carrying capacity. These various classifications have been developed to provide regional traffic movement and local access. The Principal, Major and Primary Arterial classifications, and Smart Streets primarily serve through traffic. Secondary and Collector arterial highways function as collectors funneling traffic from local streets to Primary, Major, and Principal Arterials. Each functional classification that exists within the City of Placentia is described below, along with the specific roadways falling within each classification.



**CITY of PLACENTIA  
General Plan Update**

**ORANGE COUNTY MASTER  
PLAN OF ARTERIAL  
HIGHWAYS (MPAH)**

**Legend**

- Placentia City Limits
- ++++ Railroad
- Red line Major Arterial
- Blue line Primary Arterial
- Black line Secondary Arterial
- Green line Two-Lane Divided Collector
- Thin black line Collector
- Yellow line Augmented Arterial (Smart Street)

Source: OCTA MPAH 2017

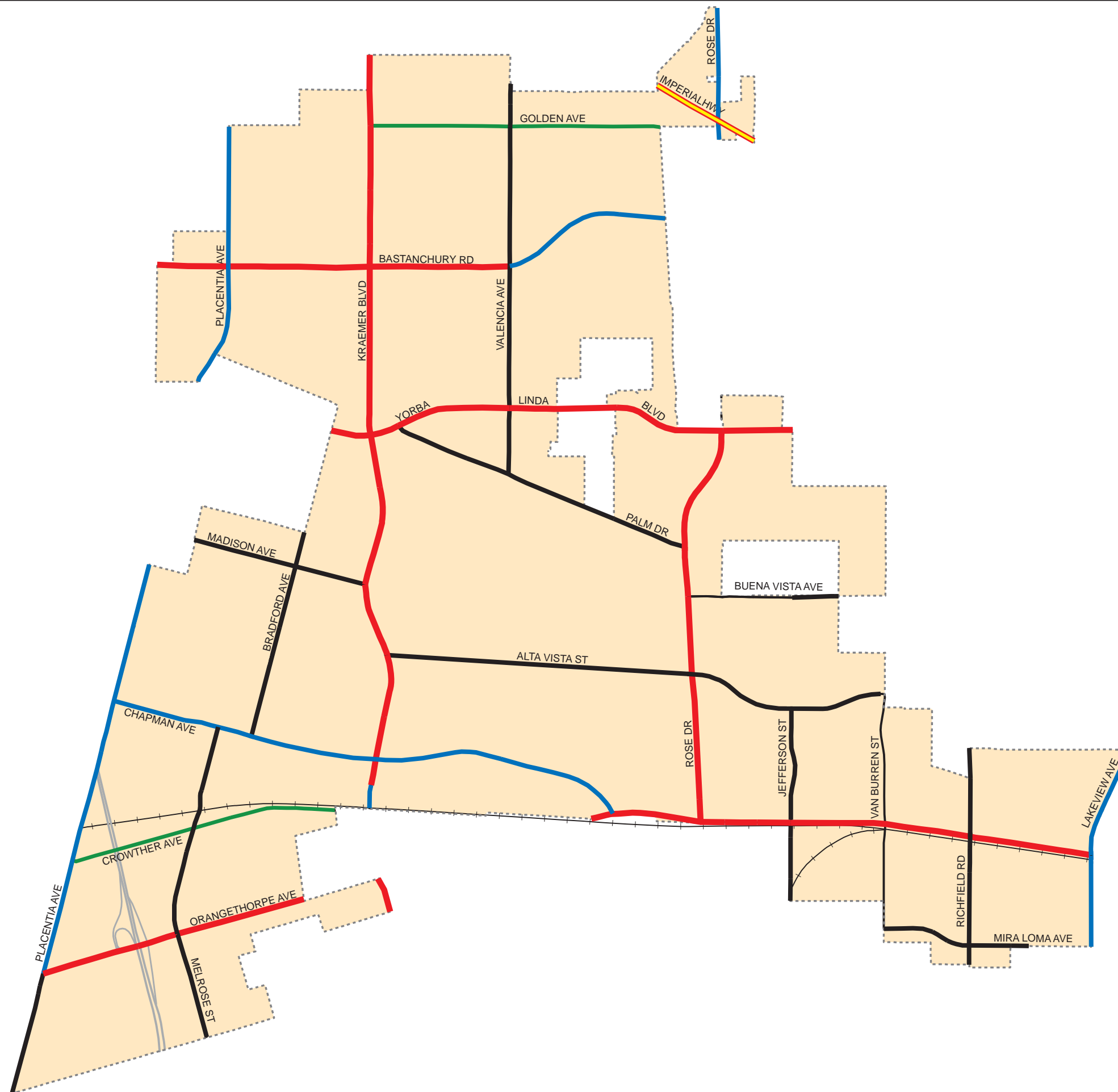


Figure 3-1

### 3.1.1 Major Arterials

A Major Arterial Highway is designated as a six-lane divided roadway, with a typical right-of-way width of 120 feet and a roadway width from curb to curb of 102 feet. A Major Arterial has a planned capacity to accommodate between 30,000 and 45,000 vehicle trips per day at LOS C or better. A Major Arterial's function is similar to that of a Principal Arterial. In Placentia the following streets are classified as Major Arterials under MPAH are:

- Imperial Highway (also as smart street)
- Orangethorpe Avenue



A Modified Major Arterial Highway is designed to accommodate traffic volumes when a Major Arterial Highway is warranted in already developed areas, but a full 120 feet of right-of-way is not feasible due to existing structures or topography. A modified major arterial is developed as a six-lane facility within a 100-foot right-of-way. This generally requires removal of all on-street parking.

In Placentia the following streets are classified as Modified Major Arterials:

- Bastanchury Road between the West City Limit and Valencia Avenue
- Yorba Linda Boulevard
- Kraemer Boulevard
- Rose Drive

### 3.1.2 Primary Arterials

A Primary Arterial Highway is designated as a four-lane divided roadway, with a typical right-of-way width of 100 feet and a roadway width from curb to curb of 84 feet. A Primary Arterial has a planned capacity to accommodate between 20,000 and 30,000 vehicle trips per day at LOS C or better. A Primary Arterial's function is to service nonlocal through traffic and provide limited local access. In Placentia the following streets are classified as Primary Arterials under MPAH:



- Chapman Avenue between Kraemer Boulevard and Orangethorpe Avenue
- Bastanchury Road between the East City Limit and Valencia Avenue
- Kraemer Boulevard
- Lakeview Avenue

A Modified Primary Arterial Highway is designed to accommodate traffic volumes when a Primary Arterial Highway is warranted in already developed areas, but a full 100 feet of right-of-way is not feasible due to existing structures or topography. A modified primary arterial is developed as a four-lane facility within an 80-foot right-of-way. This generally requires removal of on-street parking, restriping for left-turn channelization, and prohibition of left turns during peak hours. In Placentia the following streets are classified as Modified Primary Arterials:

- Chapman Avenue between the West City Limit and Kraemer Boulevard
- Placentia Avenue between Orangethorpe Avenue and Madison Avenue
- Placentia Avenue between south of Palm Drive and North City Limit

### 3.1.3 Secondary Arterials

A Secondary Arterial Highway is designated as a four-lane undivided roadway, with a typical right-of-way width of 80 feet and a roadway width from curb to curb of 64 feet. A Secondary Arterial has a planned capacity to accommodate between 10,000 and 20,000 vehicle trips per day at LOS C or better. A Secondary Arterial serves as a collector, distributing traffic between local streets and Principal, Major and Primary Arterials. Although some Secondary Arterials serve as through routes, most provide more direct access from local surrounding land uses than Principal, Major, or Primary Arterials. In Placentia the following streets are classified as Secondary Arterials under MPAH:



- Palm Drive
- Buena Vista Avenue
- Alta Vista Street
- Placentia Avenue between the 91 Freeway and Orangethorpe Avenue
- Melrose Avenue
- Valencia Avenue
- Jefferson Street
- Richfield Road
- Bradford Avenue
- Madison Avenue

### 3.1.4 Collector Arterials

A Collector Arterial Highway is designated as a two-lane undivided, unrestricted access roadway, with a typical right-of-way width of 56 feet and a roadway width from curb to curb of 40 feet. A Collector Arterial, which provides access between local streets and larger arterials, has a planned capacity to accommodate up to 10,000 vehicle trips per day at LOS C or better. In Placentia the following streets are classified as a Collector Arterials:



- Van Buren Street
- Buena Vista Avenue between Rose Drive and Jefferson Street
- Golden Avenue
- Crowther Avenue

### 3.1.5 Local Streets

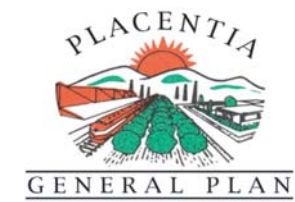
Local streets are intended to serve adjacent land uses only, allowing access primarily to residential uses, with some commercial and industrial driveways, and providing on-street parking for neighborhoods. These streets are not intended to serve through traffic traveling from one part of the City to another. Local streets in Placentia can be defined as non-arterial streets with direct residential frontage having a planned capacity of less than 1,200 vehicle trips per day. Although local residential streets may have a design capacity of up to 3,000 vehicles per day, they typically cannot handle traffic

volumes at that level due to factors such as pedestrian safety, sight distance, parked vehicles, numerous driveways, and neighborhood concerns. Many studies assign a practical capacity of 1,200 vehicles per day for most local residential streets.



## 3.2 CITY OF PLACENTIA ROADWAY NETWORK

Figure 3-2 provides a map of the Existing General Plan major City roadway facilities by street classification for the City of Placentia. Figure 3-3 provides cross sections of the four main City arterial roadway classifications. Table 3-1 provides a summary of the major roadway classifications comprising the City roadway network.



**CITY of PLACENTIA**  
General Plan Update  
**Current General Plan (2018)**  
**Functional Roadway**  
**Classifications**

**Legend**

- Placentia City Limits
- ++++ Railroad
- Major
- - - Modified Major
- Primary
- - - Modified Primary
- Secondary
- - - Modified Secondary
- Divided Collector
- Collector

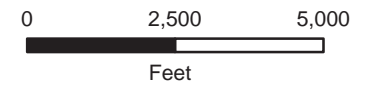
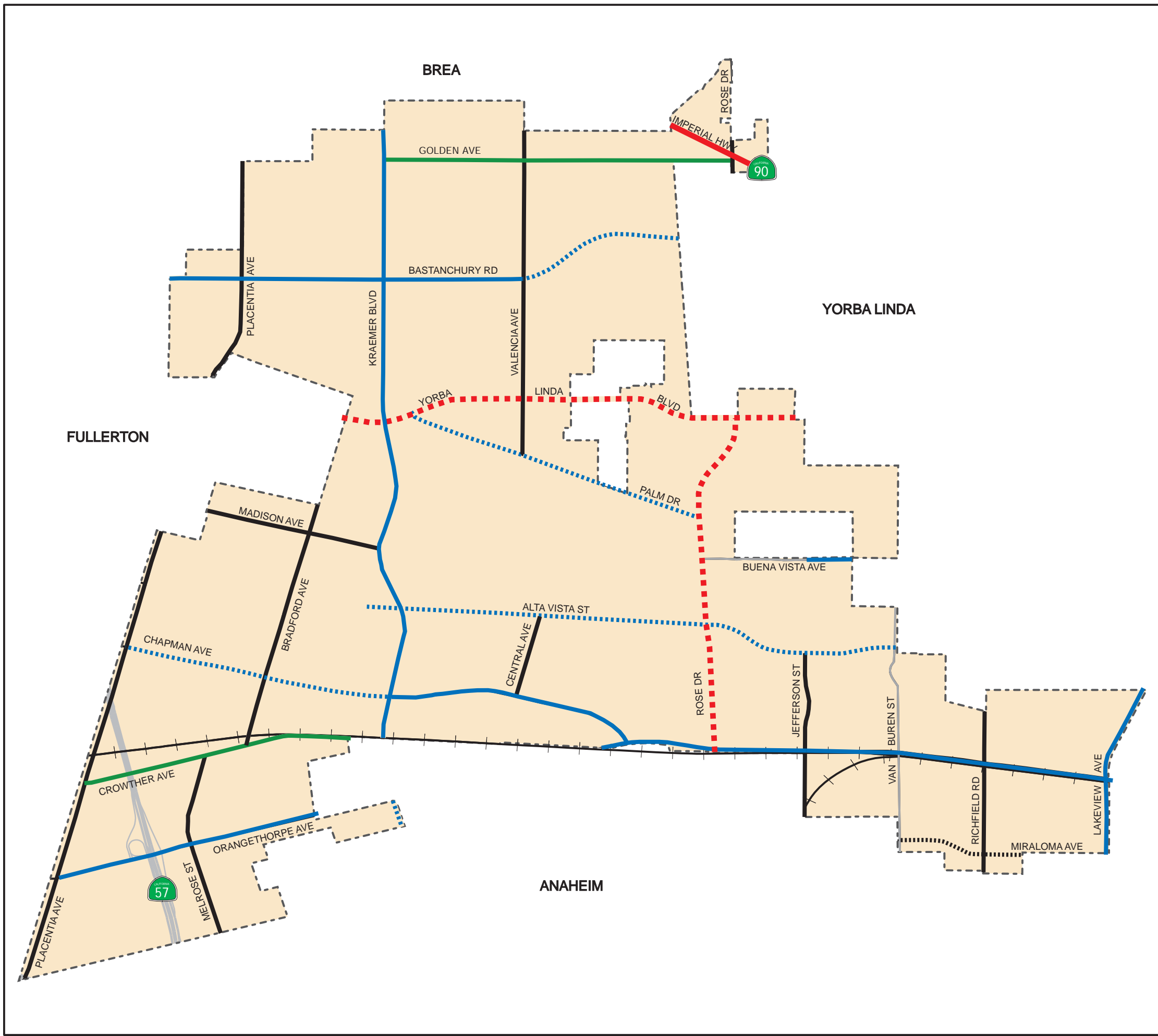
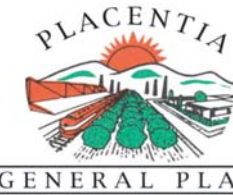


Figure 3-2



CITY of PLACENTIA  
General Plan Update

Existing Roadway  
Cross Sections

Legend

- Placentia City Limits
- ++++ Railroad

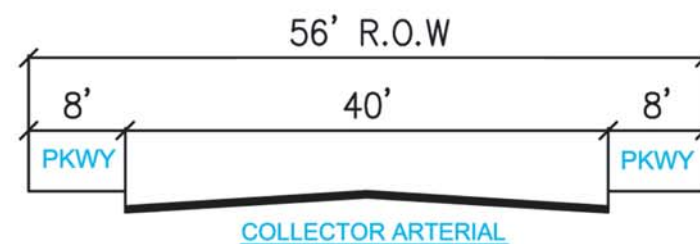
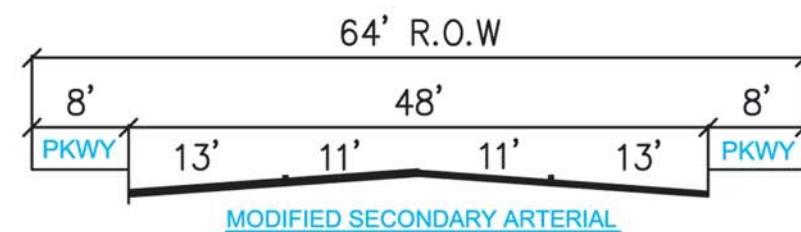
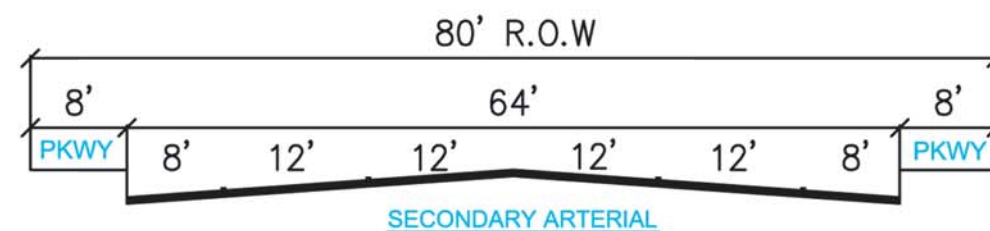
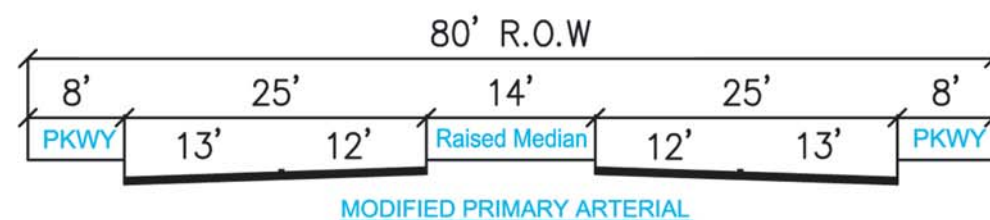
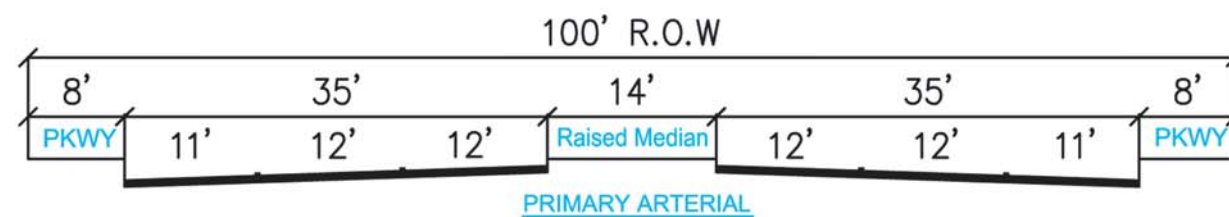
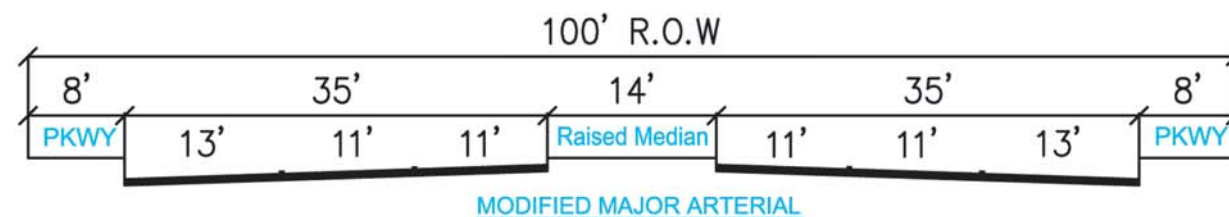
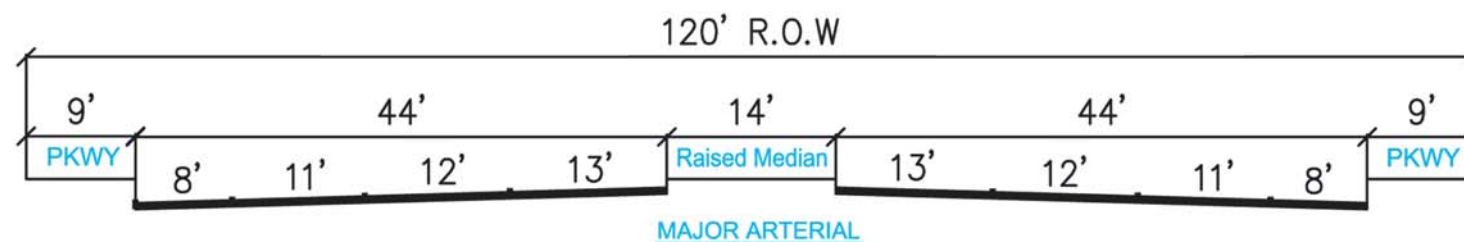


Figure 3-3

**TABLE 3-1 – FUNCTIONAL CLASSIFICATION OF ARTERIAL STREET SEGMENTS**

Facility Type	Designated Curb-to-Curb Width	Designated Right-of-Way Width	Designated Number of Through Lanes	Planned Daily Capacity 1	Function
Major Arterial Highway	102 feet	120 feet	Six Divided	45,000	Carries both local traffic and nonlocal commuter traffic. Direct access to abutting land uses is discouraged.
Modified Major Arterial	84 feet	100 feet	Six Divided	45,000	Similar to Major Arterial, but with reduced right-of-way and no curb parking.
Primary Arterial Highway	84 feet	100 feet	Four Divided	30,000	Similar to Major Arterial, but is designated where level of traffic is not enough to warrant a Major Arterial.
Modified Primary Arterial	64 feet	80 feet	Four Divided	30,000	Similar to Primary Arterial, but with reduced right-of-way and no curb parking.
Secondary Arterial Highway	64 feet	80 feet	Four Undivided	20,000	Collects and routes traffic from the local street system to the arterial system. Some also serve as through routes. All provide more direct access than a Major or Primary.
Modified Secondary Arterial Highway	48 feet	64 feet	Four Undivided	20,000	Similar to Secondary Arterial but with reduced right-of-way and no curb parking.
Collector Arterial	40 feet	56 feet	Two Undivided	10,000	Collects and routes traffic to the arterial system, with limited nonlocal through traffic.

Note 1: Planned daily capacity at Level-of-service C or better

SOURCES: Guidance for Administration of the Orange County Master Plan of Arterial Highways (OCTA, October 22, 2012);

*Orange County Highway Design Manual*, Section 101.2, Section 102.1 (June 2005)

Placentia's roadway network is primarily oriented in a northeast/southwest and northwest/southeast grid pattern in the older parts of the City, and in a north-south/east-west grid in the newer parts of the City to the north and east. Major facilities that are generally oriented in a north-south direction include the SR-57 Freeway, Placentia Avenue, Kraemer Boulevard, Valencia Avenue, and Rose Drive. Major east-west roadways include Imperial Highway, Bastanchury Road, Yorba Linda Boulevard, Chapman Avenue, and Orangethorpe Avenue. The majority of the Major, Primary and Secondary arterials within the City are built out to their full paved cross sections.

Table 3-2 provides a general description of the existing roadway configurations of the major streets in the City. The LOS E capacity was used to evaluate the roadway segment LOS under the existing conditions.

**TABLE 3-2 – GENERAL DESCRIPTION OF ROADWAYS, EXISTING CONDITIONS**

Roadway	Functional Classification	Existing Lanes 1	LOS E Capacity
Imperial Highway	Major Arterial	6D	56,300
Golden Avenue	Collector	2U	12,500
Bastanchury Road	Primary Arterial	4D	37,500
Yorba Linda	Modified Major Arterial	4-6D	56,300
Palm Drive	Primary Arterial	2-4D	37,500
Madison Avenue	Secondary	2U	12,500
Buena Vista Avenue	Primary Arterial	2-4D	37,500
Alta Vista Street	Primary Arterial	4D	37,500
Chapman Avenue	Modified Primary Arterial	4D	37,500
Crowther Avenue	Secondary Arterial	2-4U	25,000
Orangethorpe Avenue	Primary Arterial	4-6D	37,500
Miraloma Avenue	Secondary Arterial	4U	25,000
Placentia Avenue	Secondary Arterial	4U	25,000
Melrose Street	Secondary Arterial	2-4U	25,000
Bradford Avenue	Secondary Arterial	2U	12,500
Kraemer Boulevard	Primary Arterial	4-6D	37,500
Valencia Avenue	Secondary Arterial	4U	25,000
Rose Drive	Primary Arterial	4D	37,500
Jefferson Street	Secondary Arterial	4U	25,000
Van Buren Street	Secondary Arterial	2U	12,500
Richfield Road	Secondary Arterial	3-4U	25,000
Lakeview Avenue	Primary Arterial	4D	37,500

SOURCE: City of Placentia, 2018 Note 1: U = Undivided; D = Divided

LOS: level-of-service

Table 3-3 provides a general description of the 2040 General Plan configurations of the major streets in the City, based on the Orange County MPAH. Golden Avenue and Crowther Avenue were reclassified as part of separate amendments to the MPAH approved by the OCTA Board of Directors in 2017. The LOS E capacity was used to evaluate the roadway segment LOS for both the Current General Plan and Proposed General Plan scenarios.

**TABLE 3-3 – GENERAL DESCRIPTION OF ROADWAYS, MPAH CONDITIONS**

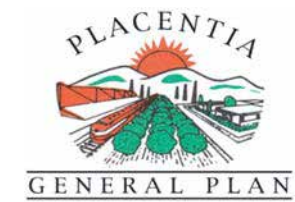
Roadway	Functional Classification	MPAH Lanes 1	LOS E Capacity
Imperial Highway	Smart Street	6D	56,300
Golden Avenue*	Collector	2D	22,000
Bastanchury Road	Major Arterial	6D	56,300
Yorba Linda Boulevard	Major Arterial	6D	56,300
Palm Drive	Secondary Arterial	4U	25,000
Madison Avenue	Secondary Arterial	4U	25,000
Buena Vista Avenue	Secondary Arterial/Collector	2U/4U	10,000-25,000
Alta Vista Street	Secondary Arterial	4U	25,000
Chapman Avenue	Primary Arterial	4D	37,500
Crowther Avenue*	Collector	2D	22,000
Orangethorpe Avenue	Major Arterial	6D	56,300
Miraloma Avenue	Secondary Arterial	4U	25,000
Placentia Avenue	Primary Arterial	4D	37,500
Melrose Street	Secondary Arterial	4U	25,000
Bradford Avenue	Secondary Arterial	4U	25,000
Kraemer Boulevard	Major/Primary Arterial	4D/6D	37,500-56,300
Valencia Avenue	Secondary Arterial	4U	25,000
Rose Drive	Major Arterial	6D	56,300
Jefferson Street	Secondary Arterial	4U	25,000
Van Buren Street	Collector	2U	12,500
Richfield Road	Secondary Arterial	4U	25,000
Lakeview Avenue	Primary Arterial	4D	37,500

SOURCE: OCTA MPAH 2017, Note 1: U = Undivided; D = Divided

Note: Golden Avenue and Crowther Avenue were reclassified as part of separate amendments to the MPAH approved by the OCTA Board of Directors in 2017

LOS: level-of-service

Figure 3-4 shows the City's truck routes along the Orange Freeway (SR-57), Placentia Avenue, Melrose Street, Kraemer Boulevard, Rose Drive, Lakeview Avenue, Imperial Highway, Yorba Linda Boulevard, Chapman Avenue, Crowther Avenue, and Orangethorpe Avenue.



**CITY of PLACENTIA**  
General Plan Update

**Existing Truck Routes**

**Legend**

- - - Placentia City Limits
- +++++ Railroad
- Existing Truck Routes

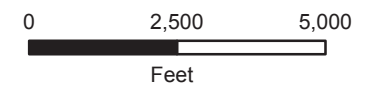
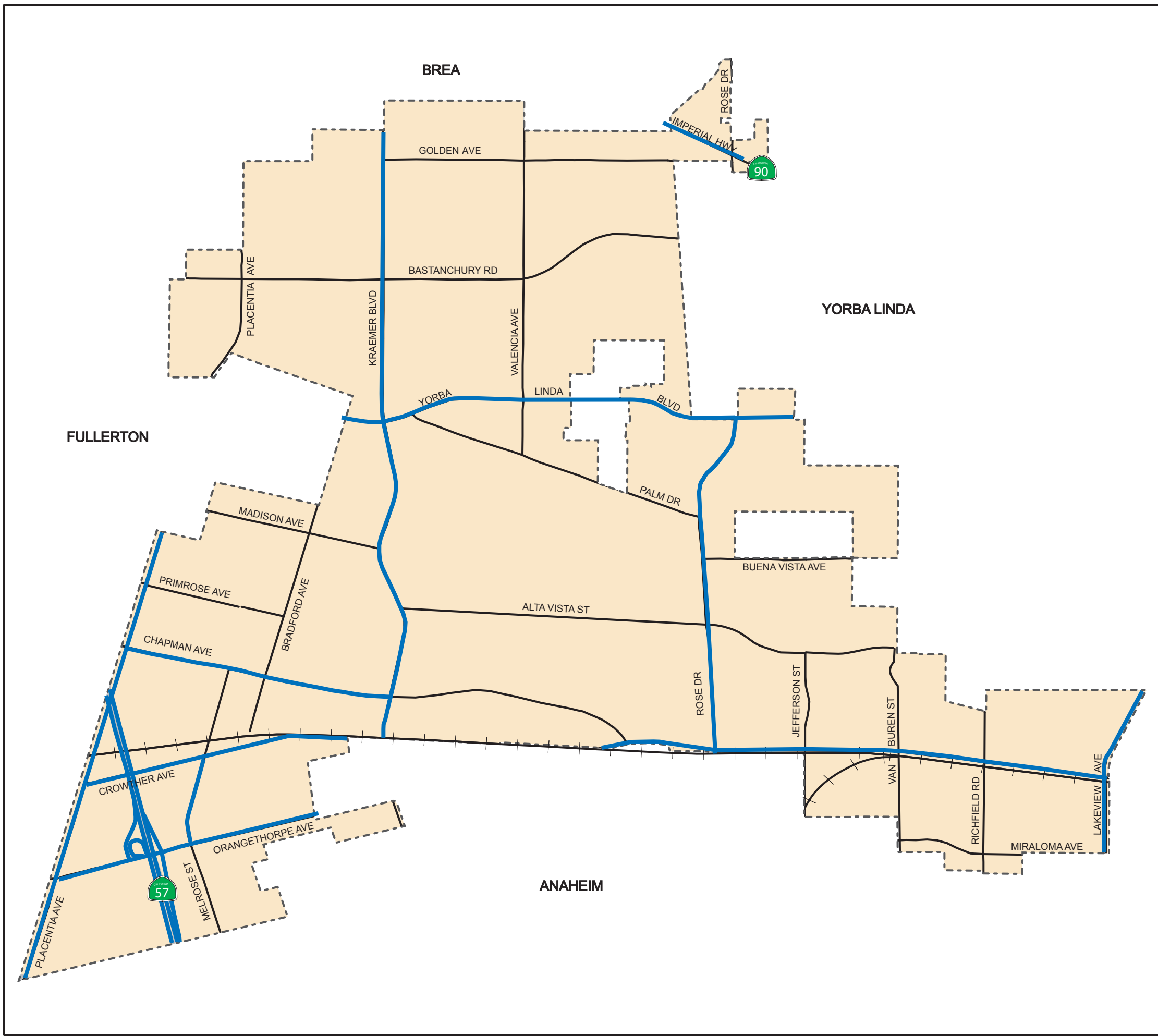


Figure 3-4



## 4.0 EXISTING CONDITIONS

This chapter summarizes the existing transportation conditions in the City of Placentia, including the City's roadway network, bicycle and pedestrian facilities, transit system, and goods movement network. These multi-modal components of the City's transportation infrastructure are all essential contributors to an integrated mobility system. The existing year for this study is year 2017.

### 4.1 EXISTING TRAFFIC CONDITIONS

Traffic conditions on the majority of the City's streets are generally good, with most streets and intersections having good to excellent levels of service (level-of-service A or B). This is particularly true in the newer parts of the City to the east and north, where the roadway network has been planned in concert with land use development. Many of the major streets in this part of the City have been planned with future needs and capacity in mind. This results in good levels of service at current traffic levels and the ability to accommodate future traffic levels with a minimum of additional investment. Some streets and intersections in the older parts of the City were however originally designed to accommodate lower levels of traffic than are currently being experienced, and thus tend to have somewhat greater levels of congestion and lower levels of service (level-of-service C or D).

An overview of daily traffic volumes currently being carried by the City's roadway network is presented in Figure 4.1. Daily traffic count data sheets for the existing roadway segments are included in Appendix A of this report.

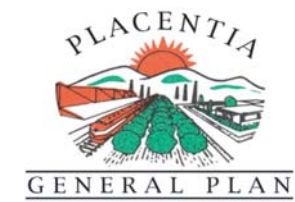
#### 4.1.1 Existing Conditions Roadway Segment Level-of-service

Roadway segment level-of-service is used to illustrate general traffic conditions along the City's roadways. It is generally used as a screen check to determine the need for more detailed peak hour analysis and to indicate the appropriate roadway classification. Roadway segment level-of-service is based on the daily traffic volume for designated sections of roadway and the practical daily vehicular capacity of that roadway segment. Roadway segment level-of-service is not necessarily an indicator of specific operational issues or needs on a specific roadway segment.

The existing roadway segment levels of service for the Placentia General Plan study roadways are indicated in Table 4-1. Table 4-1 also presents information on the roadway study segment number of lanes, capacity, and average daily traffic (ADT) volumes. As indicated, the majority of the City's roadway segments are operating at free-flow LOS A or LOS B conditions. One segment is operating at LOS E:

- Kraemer Boulevard between South City Limit to Orangethorpe Avenue
- Rose Drive between City Limit south of Golden Avenue and North City Limit

Levels-of-service presented in Table 4-1 are based on the thresholds previously presented in Section 2.5 of this document.



**CITY of PLACENTIA**  
General Plan Update

**Existing (Year 2017)**  
**Daily Traffic Volumes**

**Legend**

- Placentia City Limits
- ++++ Railroad
- x,xxx Average Daily Traffic

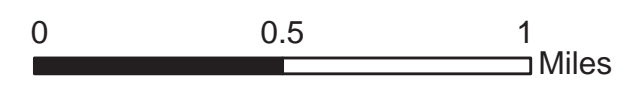
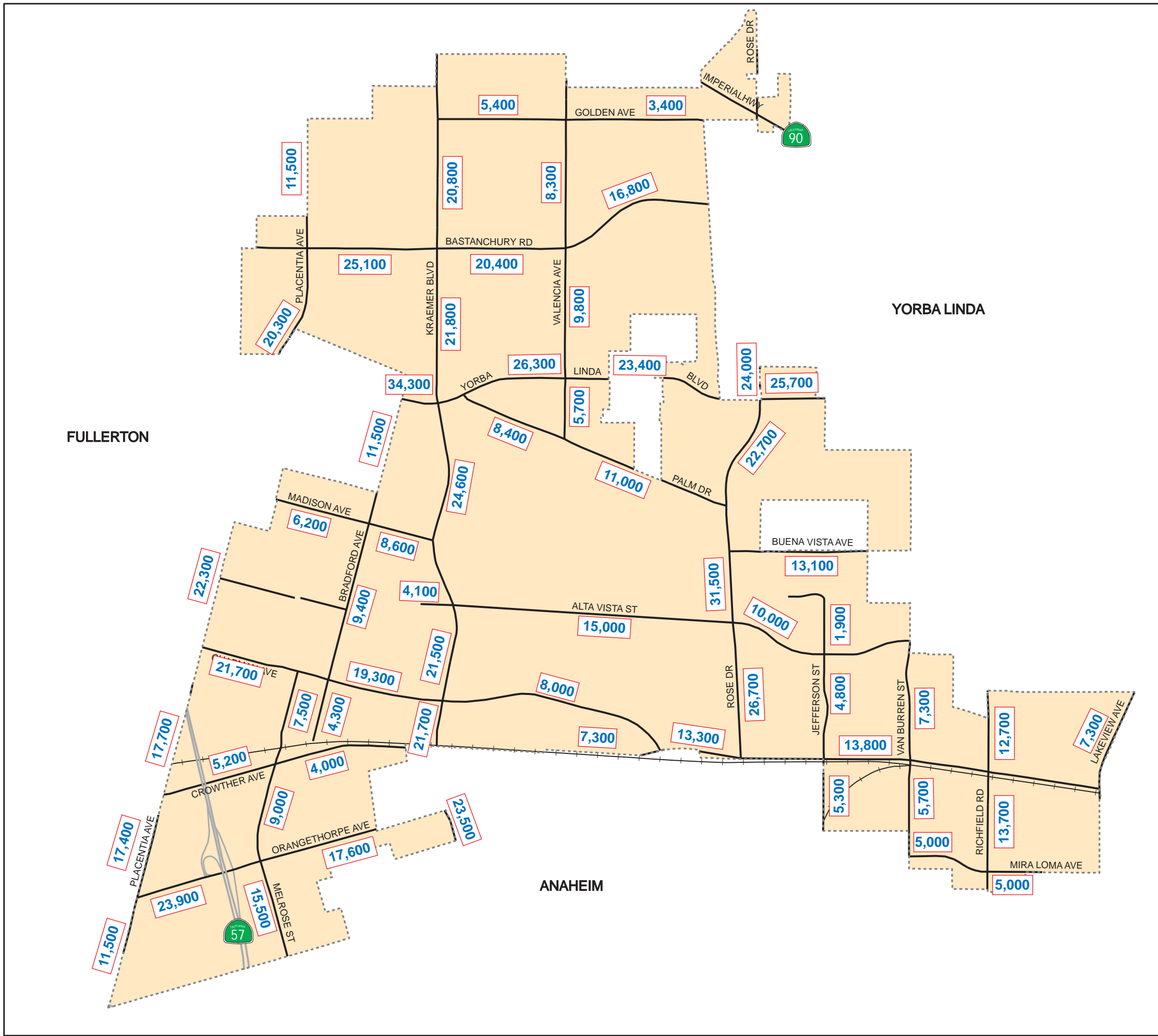


Figure 4-1

**TABLE 4-1 – ROADWAY LEVEL-OF-SERVICE, EXISTING (YEAR 2017) CONDITIONS**

ID	Roadway Segment	Lanes	LOS E Capacity	Existing Condition		
				ADT	V/C	LOS
<b>Golden Avenue</b>						
1	Valencia Avenue to East City Limit	2U	12,500	3,400	0.272	A
2	Kramer Boulevard to Valencia Avenue	2U	12,500	5,400	0.432	A
<b>Bastanchury Road</b>						
3	West City Limits to Kraemer Boulevard	4D	37,500	25,100	0.669	B
4	Kraemer Boulevard to Valencia Avenue	4D	37,500	20,400	0.544	A
5	Valencia Avenue to East City Limit	4D	37,500	16,800	0.448	A
<b>Yorba Linda Boulevard</b>						
6	Bradford Avenue to Kramer Boulevard	6D	56,300	34,300	0.609	B
7	Kramer Boulevard to Valencia Avenue	4D	37,500	26,300	0.701	B
8	Valencia Avenue to Rose Drive	4D	37,500	23,400	0.624	B
9	Rose Drive to Eastern City Limit	4D	37,500	25,700	0.685	B
<b>Palm Drive</b>						
10	Yorba Linda Boulevard to Valencia Avenue	2U	12,500	8,400	0.672	B
11	Valencia Avenue to Rose Drive	4D	37,500	11,000	0.293	A
<b>Madison Avenue</b>						
12	West City Limits to Bradford Avenue	2U	12,500	6,200	0.496	A
13	Bradford Avenue to Kraemer Boulevard	2U	12,500	8,600	0.688	B
<b>Buena Vista Avenue</b>						
14	Rose Drive to East City Limit	4D	37,500	13,100	0.349	A
<b>Alta Vista Street</b>						
15	Angelina Drive to Kramer Boulevard	2D	18,750	4,100	0.219	A
16	Kramer Boulevard to Rose Drive	4U	25,000	15,000	0.600	A
17	Rose Drive to Van Buren Street	4U	25,000	10,000	0.400	A
<b>Chapman Avenue</b>						
18	Placentia Avenue to Bradford Avenue	4U	25,000	21,700	0.868	D
19	Bradford Avenue to Kraemer Boulevard	4U	25,000	19,300	0.772	C
20	Kraemer Boulevard to Orangethorpe Avenue	4D	37,500	8,000	0.213	A
<b>Crowther Avenue</b>						
21	Placentia Avenue to Melrose Street	2U	12,500	5,200	0.416	A
22	Melrose Street to East City Limit	2U	12,500	4,000	0.320	A
<b>Orangethorpe Avenue</b>						
23	Placentia Avenue to Melrose Street	6D	56,300	23,900	0.425	A
24	Melrose Street to Kraemer Boulevard	4U	25,000	17,600	0.704	C
25	City Limit w/o Chapman Ave. to Chapman Ave.	6D	56,300	7,300	0.130	A
26	Chapman Avenue to Rose Drive	6D	56,300	13,300	0.236	A
27	Rose Drive to East City Limit	4U	25,000	13,800	0.552	A
<b>Miraloma Avenue</b>						

ID	Roadway Segment	Lanes	LOS E Capacity	Existing Condition		
				ADT	V/C	LOS
28	Van Buren Street to Richfield Road	4U	25,000	5,000	0.200	A
29	Richfield Road to Lakeview Avenue	4U	25,000	5,000	0.200	A
<b>Placentia Avenue</b>						
30	South City Limit to Orangethorpe Avenue	4U	25,000	11,500	0.460	A
31	Orangethorpe Avenue to Crowther Avenue	4D	37,500	17,400	0.464	A
32	Crowther Avenue to Chapman Avenue	4D	37,500	17,700	0.472	A
33	Chapman Avenue to n/o Primrose Avenue	4U	25,000	22,300	0.892	D
34	Macadamia Lane to Bastanchury Road	4D	37,500	20,300	0.541	A
35	Bastanchury Road to Rolling Hills Drive	4D	37,500	11,500	0.307	A
<b>Melrose Street</b>						
36	South City Limit to Orangethorpe Avenue	4U	25,000	15,500	0.620	B
37	Orangethorpe Avenue to Crowther Avenue	4U	25,000	9,000	0.360	A
38	Crowther Avenue to Santa Fe Avenue	3D	28,125	7,500	0.267	A
<b>Bradford Avenue</b>						
39	Santa Fe Avenue to Chapman Avenue	2U	12,500	4,300	0.344	A
40	Chapman Avenue to Madison Avenue	2U	12,500	9,400	0.752	C
41	Madison Avenue to North City Limit	4U	25,000	11,500	0.460	A
<b>Kraemer Boulevard</b>						
42	South City Limits to Orangethorpe Avenue	4U	25,000	23,500	0.940	E
43	Crowther Avenue to Chapman Avenue	6D	56,300	21,700	0.385	A
44	Chapman Avenue to Madison Avenue	4D	37,500	21,500	0.573	A
45	Madison Avenue to Yorba Linda Boulevard	4D	37,500	24,600	0.656	B
46	Yorba Linda Boulevard to Bastanchury Road	4D	37,500	21,800	0.581	A
47	Bastanchury Road to North City Limit	4D	37,500	20,800	0.555	A
<b>Valencia Avenue</b>						
48	Palm Drive to Yorba Linda Boulevard	4U	25,000	5,700	0.228	A
49	Yorba Linda Boulevard to Bastanchury Road	4U	25,000	9,800	0.392	A
50	Bastanchury Road to Northern City Limit	4U	25,000	8,300	0.332	A
<b>Rose Drive</b>						
51	Orangethorpe Avenue to Alta Vista Street	4D	37,500	26,700	0.712	C
52	Alta Vista Street to Palm Drive	4D	37,500	31,500	0.840	D
53	Palm Drive to Yorba Linda Boulevard	4D	37,500	22,700	0.605	B
54	City Limit s/o Golden Avenue to North City Limit	4U	25,000	24,000	0.960	E
<b>Jefferson Street</b>						
55	South City Limits to Orangethorpe Avenue	2U	12,500	5,300	0.424	A
56	Orangethorpe Avenue to Alta Vista Street	4U	25,000	4,800	0.192	A
57	Alta Vista Street to Garten Drive	2U	12,500	1,900	0.152	A
<b>Van Buren Street</b>						
58	South City Limits to Orangethorpe Avenue	2U	12,500	5,700	0.456	A

ID	Roadway Segment	Lanes	LOS E Capacity	Existing Condition		
				ADT	V/C	LOS
59	Orangethorpe Avenue to North City Limit	2U	12,500	7,300	0.584	A
<b>Richfield Road</b>						
60	South City Limits to Orangethorpe Avenue	4U	25,000	13,700	0.548	A
61	Orangethorpe Avenue to North City Limit	4U	25,000	12,700	0.508	A
<b>Lakeview Avenue</b>						
62	South City Limit to North City Limit	4D	37,500	7,300	0.195	A

Abbreviations: 2U: 2 Lane Undivided. 2D: 2 Lane Divided. 3D: 3 Lane Divided. 4U: 4 Lane Undivided. 4D: 4 Lane Divided. 5D: 5 Lane Divided. 6D: 6 Lane Div. ADT: Average Daily Traffic Volume. V/C: Volume to Capacity Ratio. LOS: level-of-service

#### 4.1.2 Existing Conditions Intersection Level-of-service

Intersection level-of-service is used to both quantitatively and qualitatively describe operating conditions at both signalized and unsignalized roadway intersections. As discussed in Section 2, level-of-service for intersections is based on a report-card scale ranging from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). In Placentia, LOS A, B, C or D is considered acceptable. LOS E and LOS F are considered unacceptable and usually indicate the need for improvements or mitigation.

The Placentia General Plan intersection Level-of-service analysis is based on both the ICU and HCM methodologies. The ICU methodology is generally based on critical volume/capacity ratios, and the HCM methodology is based on average delay at the intersection (see Section 2 of this document for more discussion of the ICU and HCM methodologies). The AM and PM peak hour level-of-service analyses were conducted for the study intersections based on these methodologies. The reported level-of-service is for the "worst case" analysis (either ICU or HCM method).

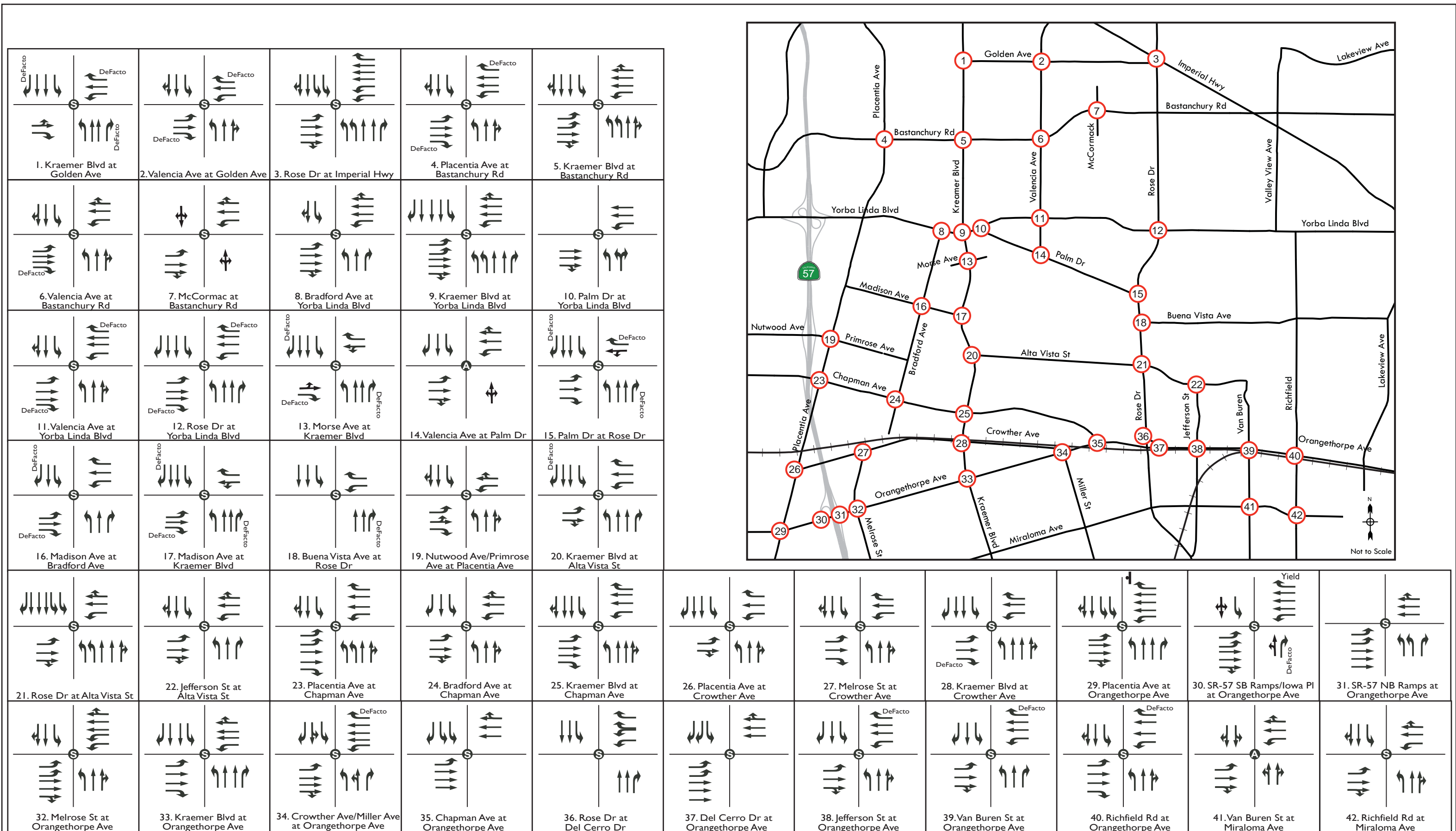
Traffic counts obtained by the City and OCTA were utilized to calculate the level-of-service (LOS) values for the study intersections. The peak hour factors based on the counts were used for the existing LOS values calculation.

Figure 4-2 shows existing intersection lane geometries for the 42 study intersections. Figure 4-3 presents the existing AM and PM peak hour turning movement traffic volumes. Existing AM and PM peak hour intersection count data sheets are included in Appendix B of this report.

Intersection level-of-service analysis for the study area intersections are summarized in Table 4-2. As shown in Table 4-2, the majority of the City's intersections are operating at an acceptable level-of-service D or better condition for both the AM and PM peak hours. However in 2017 there were two signalized study intersections operating at unacceptable LOS E or LOS F conditions during the PM peak hour:

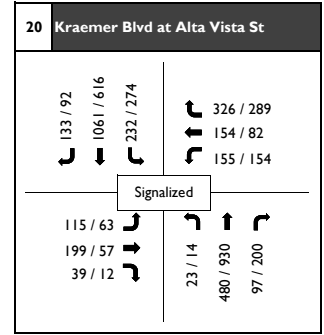
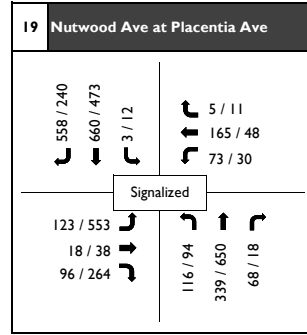
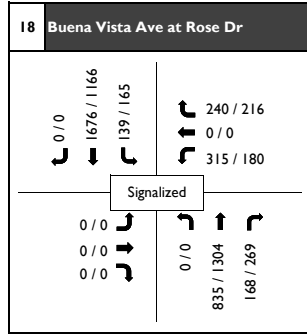
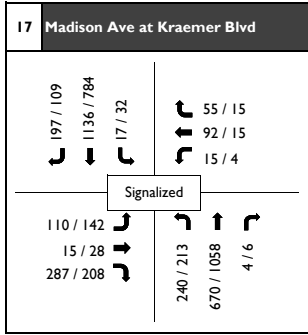
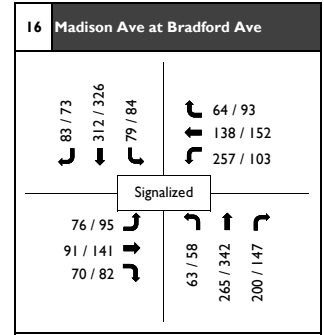
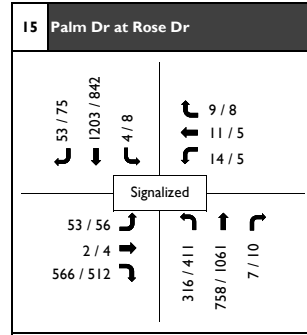
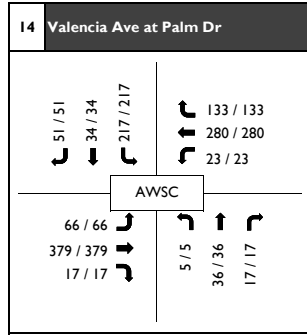
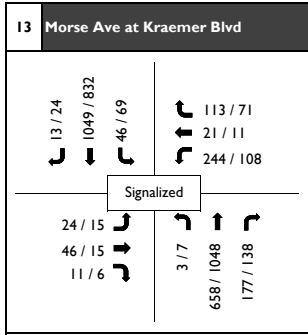
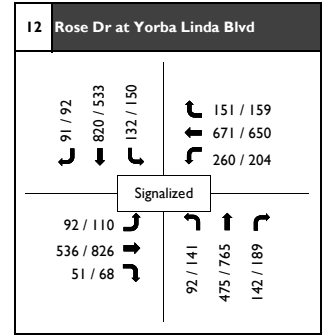
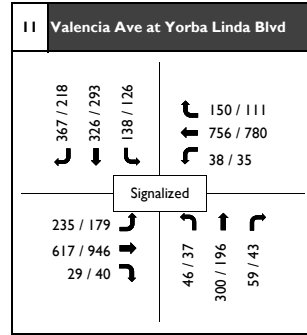
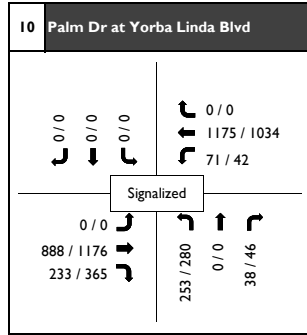
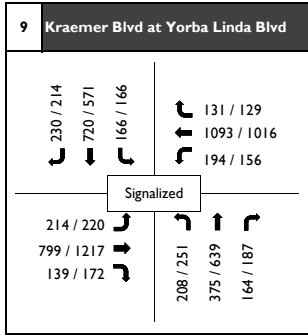
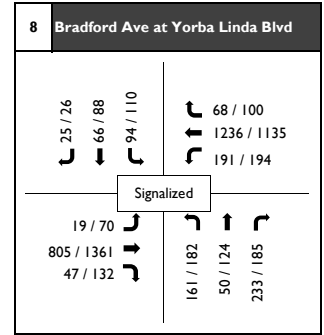
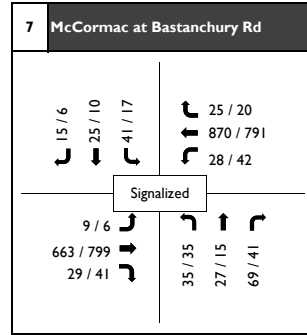
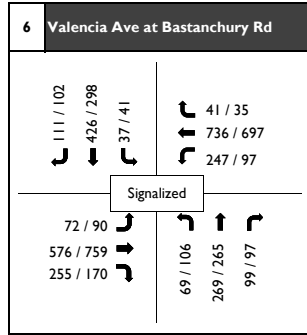
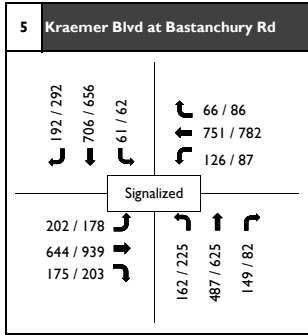
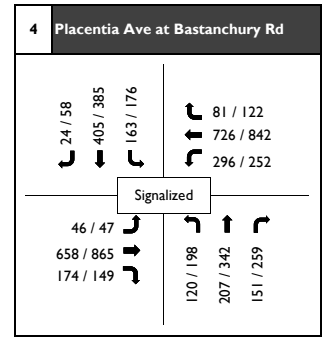
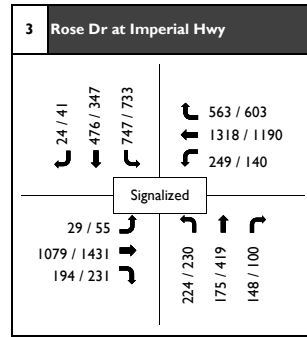
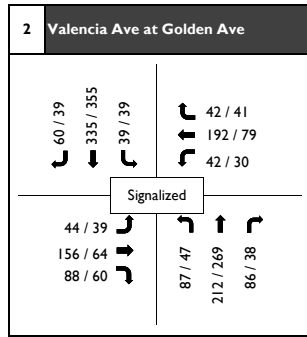
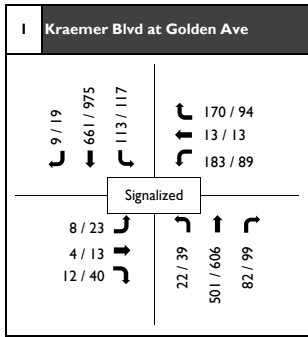
- Morse Avenue at Kraemer Boulevard during the AM peak hour
- Madison Avenue at Kraemer Boulevard during the AM peak hour

Intersection operations analysis worksheets for existing traffic conditions are included in Appendix F.



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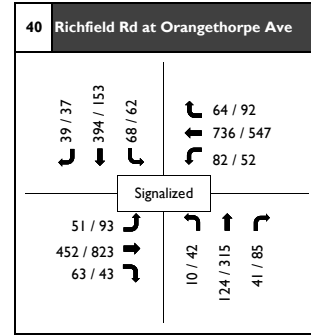
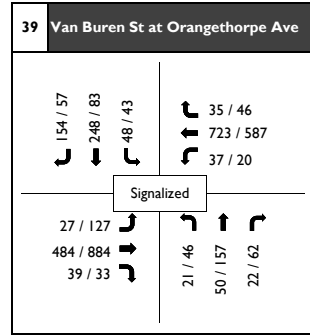
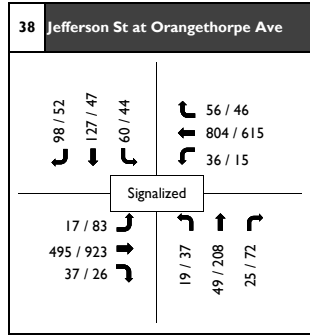
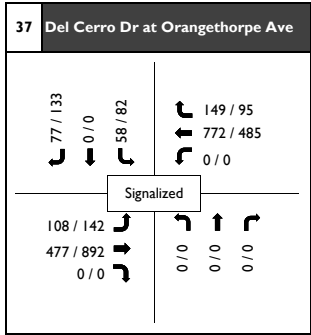
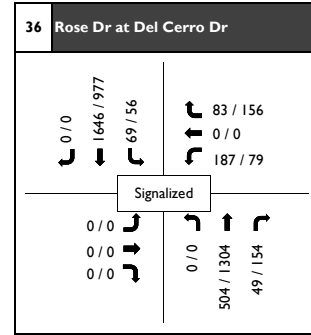
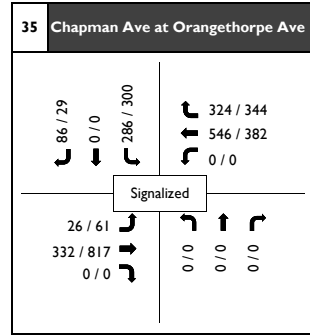
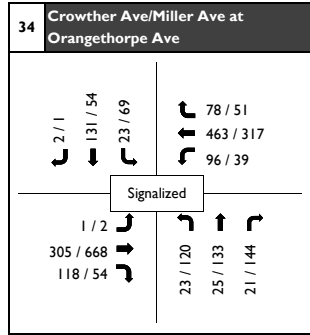
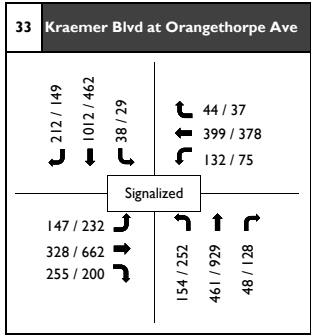
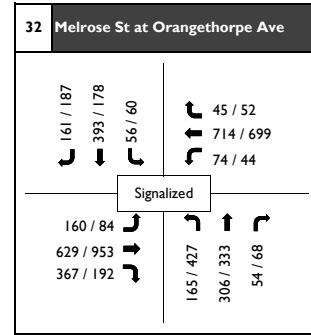
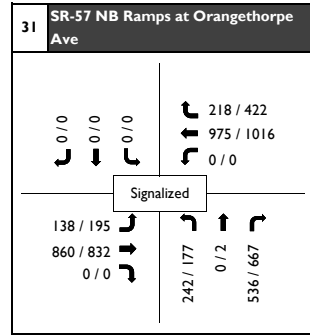
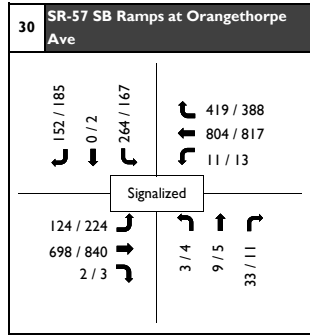
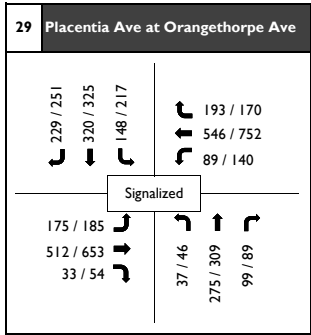
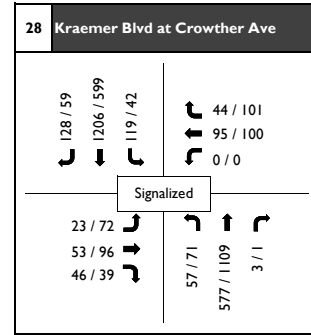
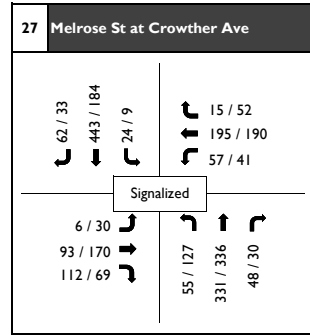
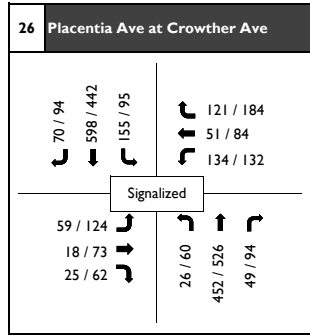
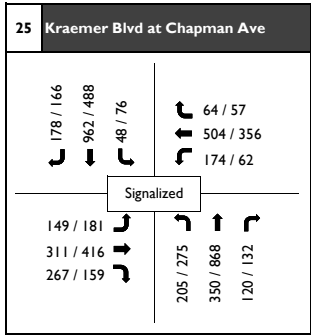
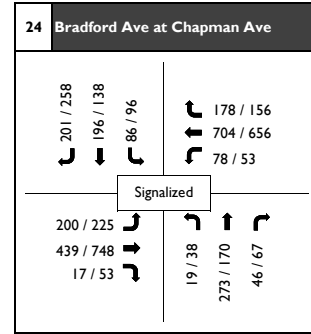
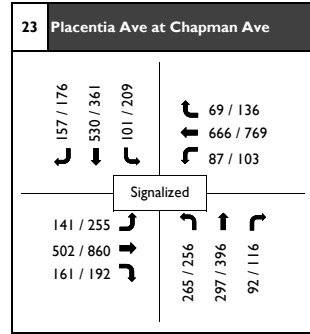
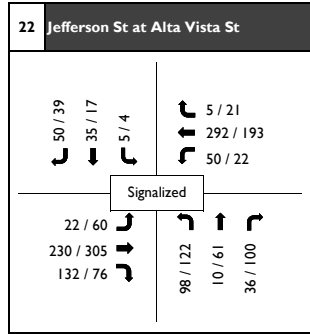
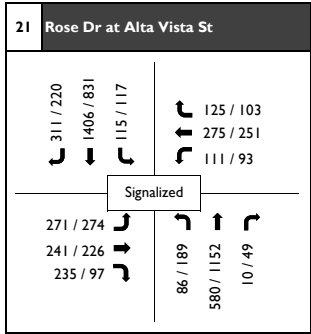
XX / XX AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign





XX / XX AM / PM Peak Hour Volumes

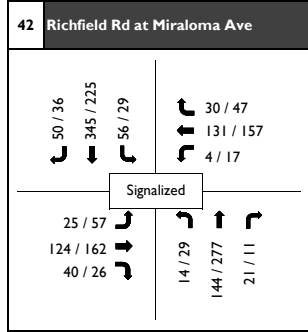
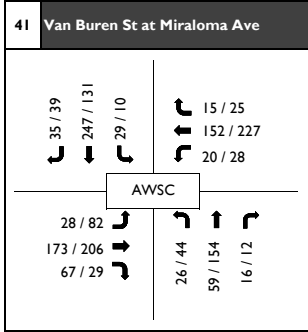
OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign







XX / XX

AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign



**TABLE 4-2 – INTERSECTION LEVEL-OF-SERVICE, EXISTING (YEAR 2017) CONDITIONS**

ID	Study Intersection	AM Peak Hour			PM Peak Hour		
		ICU	HCM	LOS <sup>1</sup>	ICU	HCM	LOS <sup>1</sup>
1	Kraemer Blvd at Golden Ave	0.425	5.1	A	0.451	3.7	A
2	Valencia Ave at Golden Ave	0.478	6.4	A	0.284	3.7	A
3	Rose Dr at Imperial Hwy*	0.758	34.0	C	0.835	43.4	D
4	Placentia Ave at Bastanchury Rd	0.690	24.1	C	0.745	21.8	C
5	Kraemer Blvd at Bastanchury Rd	0.669	25.1	C	0.712	26.4	C
6	Valencia Ave at Bastanchury Rd	0.687	19.7	B	0.562	14.1	B
7	McCormac at Bastanchury Rd	0.504	4.0	A	0.398	2.5	A
8	Bradford Ave at Yorba Linda Blvd	0.607	12.7	B	0.650	14.5	B
9	Kraemer Blvd at Yorba Linda Blvd	0.652	32.5	C	0.719	31.3	C
10	Palm Dr at Yorba Linda Blvd	0.589	5.7	A	0.498	5.1	A
11	Valencia Ave at Yorba Linda Blvd	0.836	43.1	D	0.632	17.3	B
12	Rose Dr at Yorba Linda Blvd	0.751	32.5	C	0.749	32.7	C
13	Morse Ave at Kraemer Blvd	0.677	130.8	<b>F</b>	0.493	26.4	C
15	Palm Dr at Rose Dr	0.838	43.8	D	0.630	21.1	C
16	Madison Ave at Bradford Ave	0.634	13.2	B	0.494	11.6	B
17	Madison Ave at Kraemer Blvd	0.917	23.9	<b>E</b>	0.549	8.4	A
18	Buena Vista Ave at Rose Dr	0.835	13.5	D	0.683	10.6	B
19	Nutwood Ave at Placentia Ave	0.705	11.0	C	0.539	10.2	B
20	Kraemer Blvd at Alta Vista St	0.773	33.8	C	0.743	24.6	C
21	Rose Dr at Alta Vista St	0.714	28.2	C	0.613	21.4	C
22	Jefferson St at Alta Vista St	0.335	7.2	A	0.284	6.8	A
23	Placentia Ave at Chapman Ave	0.600	21.3	C	0.656	24.4	C
24	Bradford Ave at Chapman Ave	0.697	19.0	B	0.616	13.7	B
25	Kraemer Blvd at Chapman Ave	0.722	37.4	D	0.581	40.8	D
26	Placentia Ave at Crowther Ave	0.457	5.5	A	0.501	6.5	A
27	Melrose St at Crowther Ave	0.392	11.3	B	0.337	11.2	B
28	Kraemer Blvd at Crowther Ave	0.572	11.3	B	0.414	10.6	B
29	Placentia Ave at Orangethorpe Ave	0.494	17.6	B	0.524	19.6	B
30	SR-57 SB Ramps at Orangethorpe Ave*	0.512	13.5	B	0.496	12.9	B
31	SR-57 NB Ramps at Orangethorpe Ave*	0.691	16.0	B	0.845	32.1	D
32	Melrose St at Orangethorpe Ave	0.607	20.8	C	0.668	48.3	D
33	Kraemer Blvd at Orangethorpe Ave	0.744	29.7	C	0.602	32.4	C
34	Crowther Ave/Miller Ave at Orangethorpe Ave	0.333	10.6	B	0.355	12.1	B
35	Chapman Ave at Orangethorpe Ave	0.401	6.7	A	0.312	5.8	A
36	Rose Dr at Del Cerro Dr*	0.636	5.3	B	0.447	5.0	A
37	Del Cerro Dr at Orangethorpe Ave*	0.318	5.3	A	0.293	5.2	A

ID	Study Intersection	AM Peak Hour			PM Peak Hour		
		ICU	HCM	LOS <sup>1</sup>	ICU	HCM	LOS <sup>1</sup>
38	Jefferson St at Orangethorpe Ave	0.432	10.0	A	0.470	11.5	B
39	Van Buren St at Orangethorpe Ave	0.495	12.3	B	0.466	11.9	B
40	Richfield Rd at Orangethorpe Ave	0.481	13.2	B	0.512	14.2	B
42	Richfield Rd at Miraloma Ave	0.258	6.6	A	0.262	7.6	A
	Unsignalized Intersections (HCM)	ICU	HCM	LOS	ICU	HCM	LOS
14	Valencia Ave at Palm Dr	NA	16.7	C	NA	17.1	C
41	Van Buren St at Miraloma Ave	NA	12.5	B	NA	13.0	B

<sup>1</sup> LOS are based on worst case of ICU and HCM

\*OCTA Congestion Management Plan (CMP) locations

## 4.2 EXISTING TRAFFIC DEFICIENCIES

Street system operating conditions are typically described in terms of “Level-of-service”. Level-of-service is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. The levels of service range from Level A (free flow, little congestion) to Level F (forced flow, extreme condition). An intersection is considered to be deficient when it performs at Level-of-service E or F.

### 4.2.1 Roadway Deficiencies

All of the City’s General Plan study area roadways except one are currently operating at acceptable conditions. The following roadway segment has been identified based on current deficiencies:

- Kraemer Boulevard between South City Limit to Orangethorpe Avenue is identified as having deficiency.
- Rose Drive between City Limit South of Golden Avenue to the North City Limit is identified as having deficiency.

### 4.2.2 Intersection Deficiencies

As shown in Table 4-2, the majority of the City’s intersections are currently operating at acceptable levels of service (LOS D or better) during both the AM and PM peak hours. The following two intersection locations have been identified based on current deficiencies:

- Morse Avenue at Kraemer Boulevard
- Madison Avenue at Kraemer Boulevard

## 4.3 TRANSIT SERVICE

Public transit service in Placentia includes fixed-route bus service, commuter bus service, and paratransit service. The Orange County Transportation Authority (OCTA) provides fixed route bus service within the City. OCTA operates seven fixed bus routes and provides service to La Habra, Brea, Yorba Linda, Orange, Anaheim, Fullerton, Santa Ana, and other cities in Orange County. Bus stops are located approximately

0.25 mile apart along major routes in the City. Most routes operate 7 days a week. Figure 4-4 (Existing Transit Routes) provides a map of the existing transit routes in the City of Placentia. Table 4-3 lists the routes and hours of operation of transit routes operating in the city.

**TABLE 4-3 – EXISTING TRANSIT SERVICE**

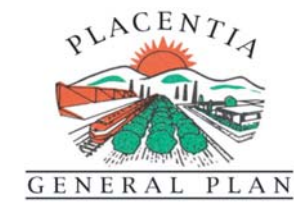
Route	Hours of Operation
OCTA	
24	5:00 AM–10:00 PM, Monday–Friday
26	5:00 AM–11:00 PM, Monday–Friday; 8:00 AM–8:00 PM, Saturday–Sunday
30	4:00 AM–11:00 PM, Monday–Friday; 6:30 AM–9:00 PM Saturday–Sunday
71	5:30 AM–11:00 PM, Monday–Friday; 6:00 AM–10:00 PM Saturday–Sunday
129	5:30 AM–9:00 PM, Monday–Friday; 6:00 AM–9:00 PM Saturday–Sunday
153	5:00 AM–10:00 PM, Monday–Friday; 7:00AM–10:00PM Saturday–Sunday
213/A	4:00 AM–7:30 PM, Monday–Friday
SOURCES: OCTA Transit Schedules, <a href="http://www.octa.net/busbook/">http://www.octa.net/busbook/</a> (accessed December 22, 2017)	
a. Boardings/alightings within City of Placentia only	

The following provides brief descriptions of each transit route serving the City:

- OCTA Route 24 travels along Chapman Avenue, within the City of Placentia, from Orangethorpe Avenue in east to Placentia Avenue in the west. This route operates Monday through Friday with an average headway of one hour.
- OCTA Route 26 travels along Chapman Avenue, Bradford Avenue, and Yorba Linda Boulevard with the eastern extent and western extent respectively Placentia Avenue and Rose Drive. This route operates Monday through Friday with an average headway of one hour and on Saturday through Sunday with an average headway of forty minutes.
- OCTA Route 30 travels along Orangethorpe Avenue from Lakeview Avenue in the east and Placentia Avenue in the west. This route operates Monday through Friday with an average headway of thirty minutes. Saturday through Sunday service operates with an average headway of fifty minutes.
- OCTA Route 71 travels along Rose Drive within the City of Placentia with Yorba Linda Boulevard and Orangethorpe Avenue being its north and south extents respectively. This route operates with a Monday through Friday headway of thirty minutes and a fifty minute interval Saturday and Sunday.
- OCTA Route 129 operates along Kramer Boulevard within the City of Placentia with the north and south extents being Golden Avenue and Orangethorpe Avenue respectively. This route

operates on an average headway of forty minutes Monday through Friday and one hour Saturday and Sunday.

- OCTA Route 153 travels along Placentia Avenue, Orangethorpe Avenue, and Melrose Street within the City of Placentia. The routes north and south operation extents respectively are Madison Avenue and La Jolla Street. Route headways are one hour Monday through Sunday.
- OCTA Route 213/A travels along Chapman Avenue and Kramer Boulevard with operation extents of Placentia Avenue and La Jolla Street within the City of Placentia. This route operates Monday through Friday with an average headway of thirty minutes.



**CITY of PLACENTIA  
General Plan Update**

**Existing  
Transit Routes**

**Legend**

- Placentia City Limits
- ++++ Railroad
- OCTA 24
- OCTA 26
- OCTA 30
- OCTA 71
- OCTA 129
- OCTA 153
- OCTA 213

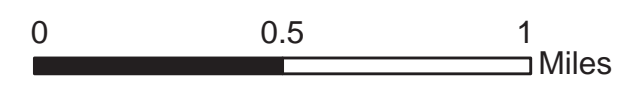
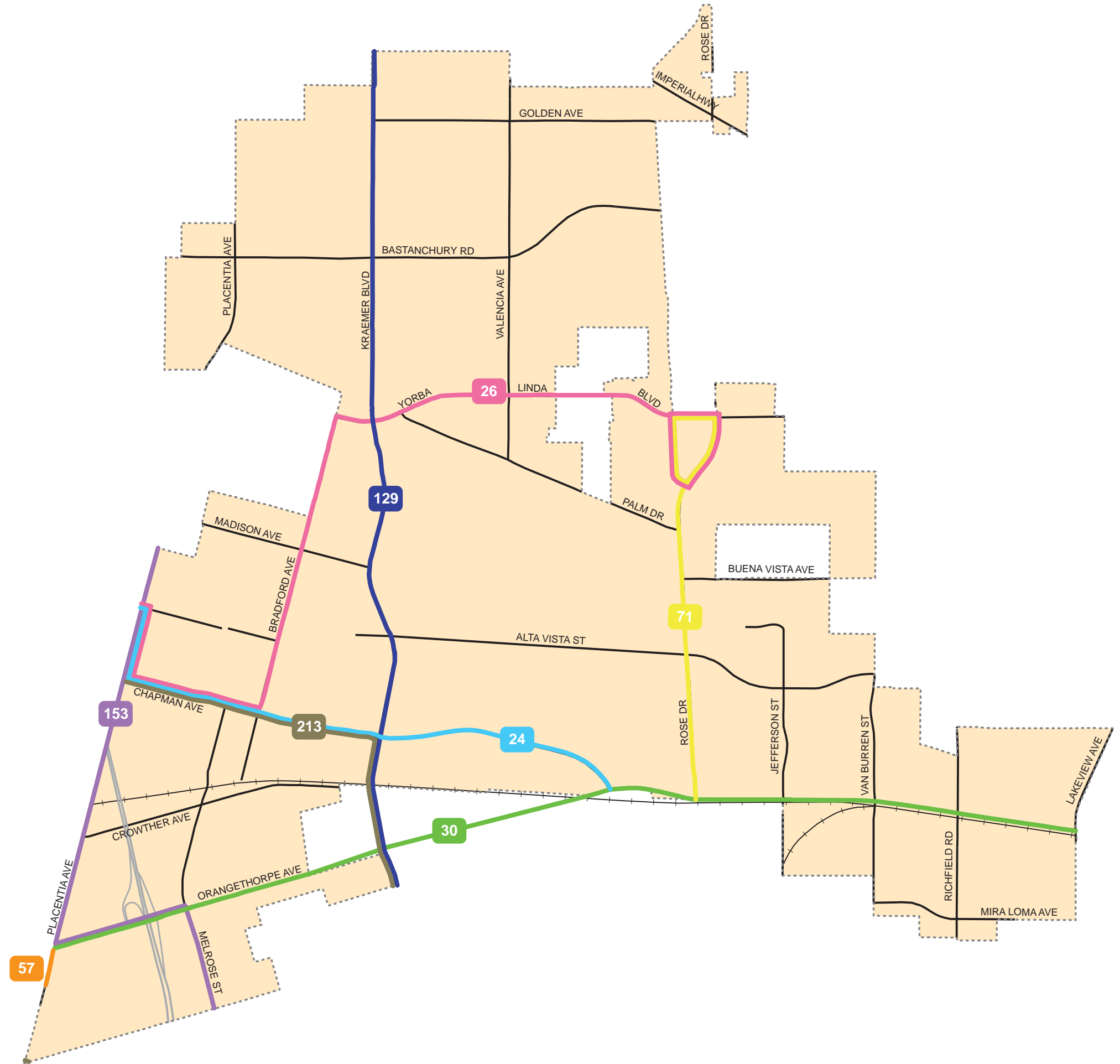


Figure 4-4

As part of OCTA's Senior Mobility Program (SMP), the City of Placentia provides a curb-to-curb Dial-A-Ride transportation service for Seniors 65 and older and persons with disabilities who are residents of the City of Placentia. It operates Monday through Friday (except holidays) from 7:30 AM until 4:30 PM to destinations within Placentia as well as Saint Jude Medical Center. Para-Transit service for disabled persons is provided by the OCTA ACCESS program. Vanpool service is available by local privately owned companies to major destinations such as commercial and employment centers.



## 4.4 NON-MOTORIZED TRANSPORTATION SYSTEM

### 4.4.1 Current Bicycle Network

Non-motorized transportation options are becoming increasingly important in meeting the future mobility needs of residents, workers, and visitors in Placentia. As conventional transportation modes become more congested and with the increasing need to reduce greenhouse gases and improve air quality, the potential for future growth is becoming more dependent on the development of safe and convenient non-motorized transportation options, including comprehensive bikeway and pedestrian networks.

As the principal non-motorized transportation modes, bicycling and pedestrian options in conjunction with improved transit availability and flexibility are cost-effective ways of reducing congestion, improving air quality, and achieving mobility goals. Meeting the needs of residents and visitors for non-transportation options by providing additional bikeway facilities and programs will contribute toward reaching the City's transportation goals.



The City of Placentia currently has over 10.3 miles of existing bikeways, including one mile of Class I bike paths, 8 miles of Class II bike lanes, and 4.4 miles of Class III bike routes. An additional 4 mile of Class I,

10.9 miles of Class II, and 1.4 miles of Class III bikeways are planned.

The existing Placentia bikeway network is shown on Figure 4-5 (Existing Bike Routes). The three existing bikeway facility types provided for in the City are described below – Class I bike paths (off-road paved), Class II bike lanes (on-road striped and signed), and Class III bike routes (on-road signed).

### *Class I Bike Paths*

Class I bike paths are located off roadways, with at-grade or grade-separated roadway crossings. Class I bike paths do not allow motor vehicle traffic. Class I Bike Paths are typically located along long uninterrupted corridors such as rivers, creeks, flood control channels, and railroad rights-of-way. Class I bike paths adjacent to flood control channels, inland waterways, and railroad rights-of-way are primarily intended for bicyclists but are often shared by other recreational users such as walkers, runners, and equestrians.

There is approximately a 0.10 of a mile of existing Class I bicycle facilities in the City on Mariposa Avenue between Richfield Road and Highland Avenue. There is also a loop around the lake in Tri-City Park, however, the park was recently turned over to the County of Orange, and the facility is now part of the county system.

### *Class II Bike Lanes*

Class II bicycle facilities are signed and striped bicycle lanes located to the right of the vehicle traffic lane along a roadway. Bicycle lanes are typically located along collector and arterial roadways that provide connections through the City street system. They are the primary bike routes in the City. Class II facilities may not be as desirable to bicyclists as Class I routes, as they must be shared with vehicle traffic, but they generally are more feasible to develop and provide access to more destinations, since they can potentially be implemented on many different types of streets.

There are approximately 7.9 miles of existing Class II bicycle facilities in the City, including the following routes:

- Placentia Avenue from Rospaw Way to N/O Palm Drive
- Golden Avenue from Kramer Boulevard to California Street
- Bastanchury Road from West City Limits to Valencia Avenue
- Kramer Boulevard from Golden Avenue to Yorba Linda Boulevard
- Valencia Avenue from Elm Street to Holmes Avenue
- Palm Drive from Yorba Linda Boulevard to Rose Drive
- Alta Vista Street from Angelina Drive to Van Buren Street
- Central Avenue from Chapman Avenue to Alta Vista Street
- Orangethorpe Avenue from W/O Chapman Avenue to Del Cerro Drive



Bike Route Sign on Bradford Avenue



### *Class III Bike Routes*

Class III bike routes are signed as bikeways but have no designated area identified by striping or other means to separate them from vehicular traffic. Class III bike routes provide shared use with pedestrian and/or motor vehicle traffic and are identified only by bike route signing and are typically located along high-demand corridors. There are existing Class III bicycle facilities in the City totaling approximately 4.4 miles.

## 4.5 CURRENT PEDESTRIAN NETWORK

Pedestrian facilities are critical when planning for pedestrian connectivity and enhancing the walkability of neighborhoods and commercial districts. The City of Placentia is generally laid out on a grid street pattern, which affords pedestrian connectivity to much of the City. The City provides sidewalks on the majority of these streets, and many are equipped with enhanced pedestrian facilities such as curb ramps, pedestrian crosswalks, and tactile Americans with Disabilities Act (ADA) pads to provide connectivity and accessibility to major attractions such as shopping centers, schools, and parks.



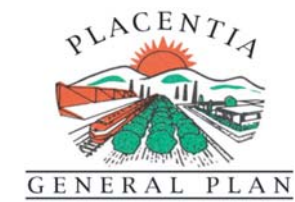


Pedestrian Crosswalk on Bradford Avenue

Sidewalks provide an accessible and convenient path for pedestrians when well planned and designed. Adequate sidewalk widths free of irregular pavement, large cracks, and other damage should be considered for each street classification, with minimal obstructions and barriers which may inhibit pedestrian circulation. Pedestrian crossings that have been enhanced, such as marked crosswalks and those with ladder-striping, and high-visibility crosswalks such as those with flashing beacons help improve the safety of pedestrians crossing at intersections near schools and throughout the City. Curb ramps and tactile ADA pads at intersections improve the accessibility and safety of senior citizens, children, pedestrians with strollers, and the disabled. Providing enhanced pedestrian facilities encourages walking as a mode of travel, reducing traffic congestion and associated greenhouse gas emissions while increasing public health. The City is in the process of upgrading facilities to ADA regulations requiring compliance for accessibility.

The City provides pedestrian safety enhancements such as crosswalks with pedestrian signal heads and push buttons, curb ramps, and tactile ADA pads at all major signalized intersections throughout the City. High-visibility crosswalks (such as ladder-striped), curb ramps, countdown pedestrian signal heads, and "SLOW SCHOOL XING" pavement markings are provided at intersections adjacent to or near schools to provide additional safety measures for children.

The existing Placentia sidewalks and curb ramps are shown on Figure 4-6.



**CITY of PLACENTIA  
General Plan Update**

**Existing  
Bicycle Network**

**Legend**

- Placentia City Limits
- ++++ Railroad
- Blue line Class I Existing Bike Path
- Pink line Class II Existing Bike Lane
- Yellow line Class III Existing Bike Route

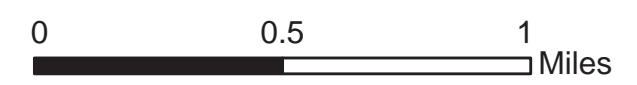
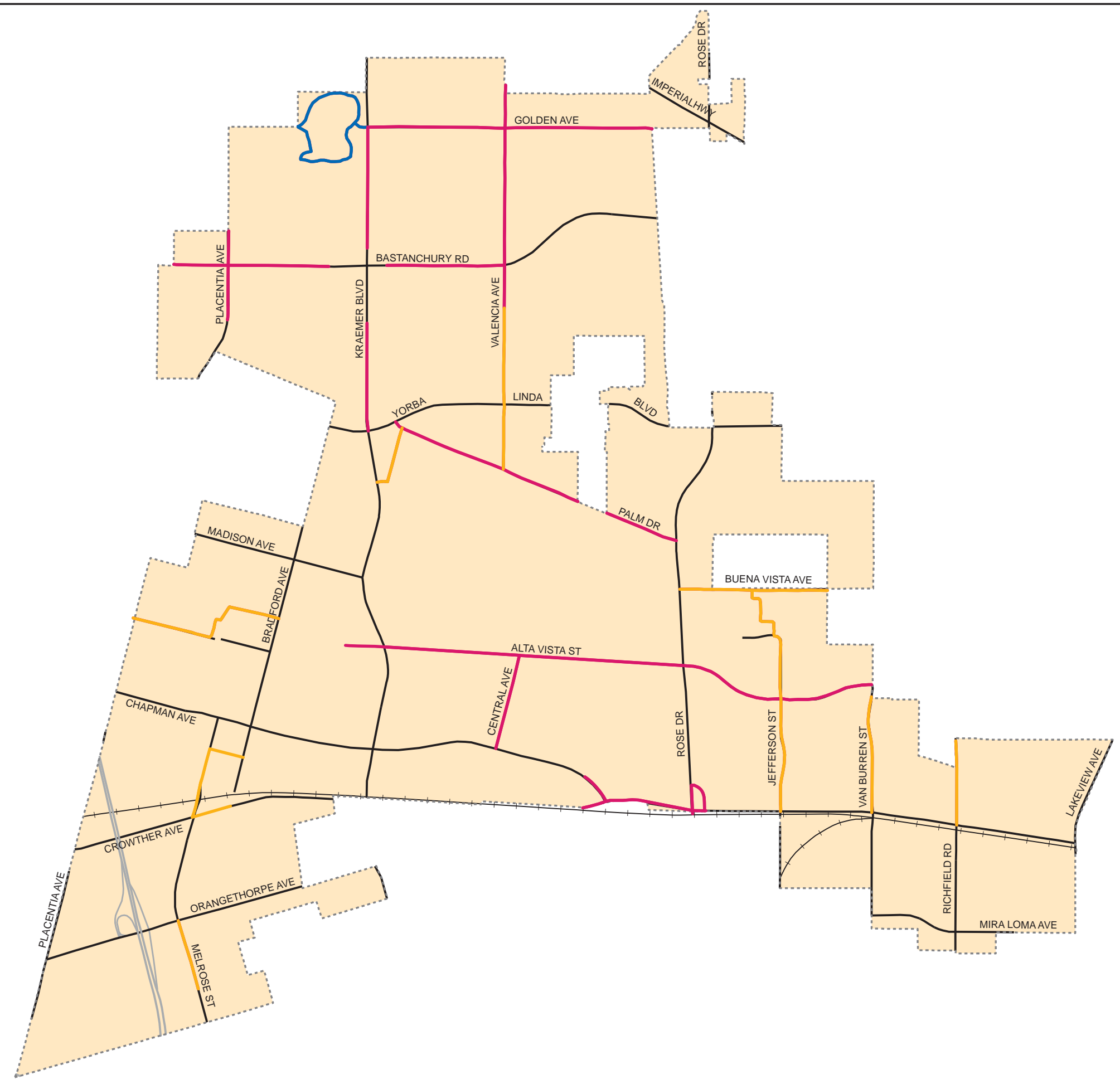
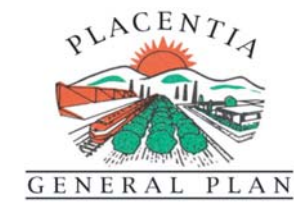


Figure 4-5



**CITY of PLACENTIA  
General Plan Update**

**Existing Sidewalk and  
Curb Ramp Network**

**Legend**

- Placentia City Limits
- ++++ Railroad
- Existing Sidewalk
- Existing Curb Ramp

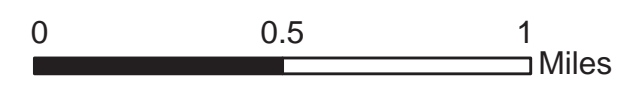
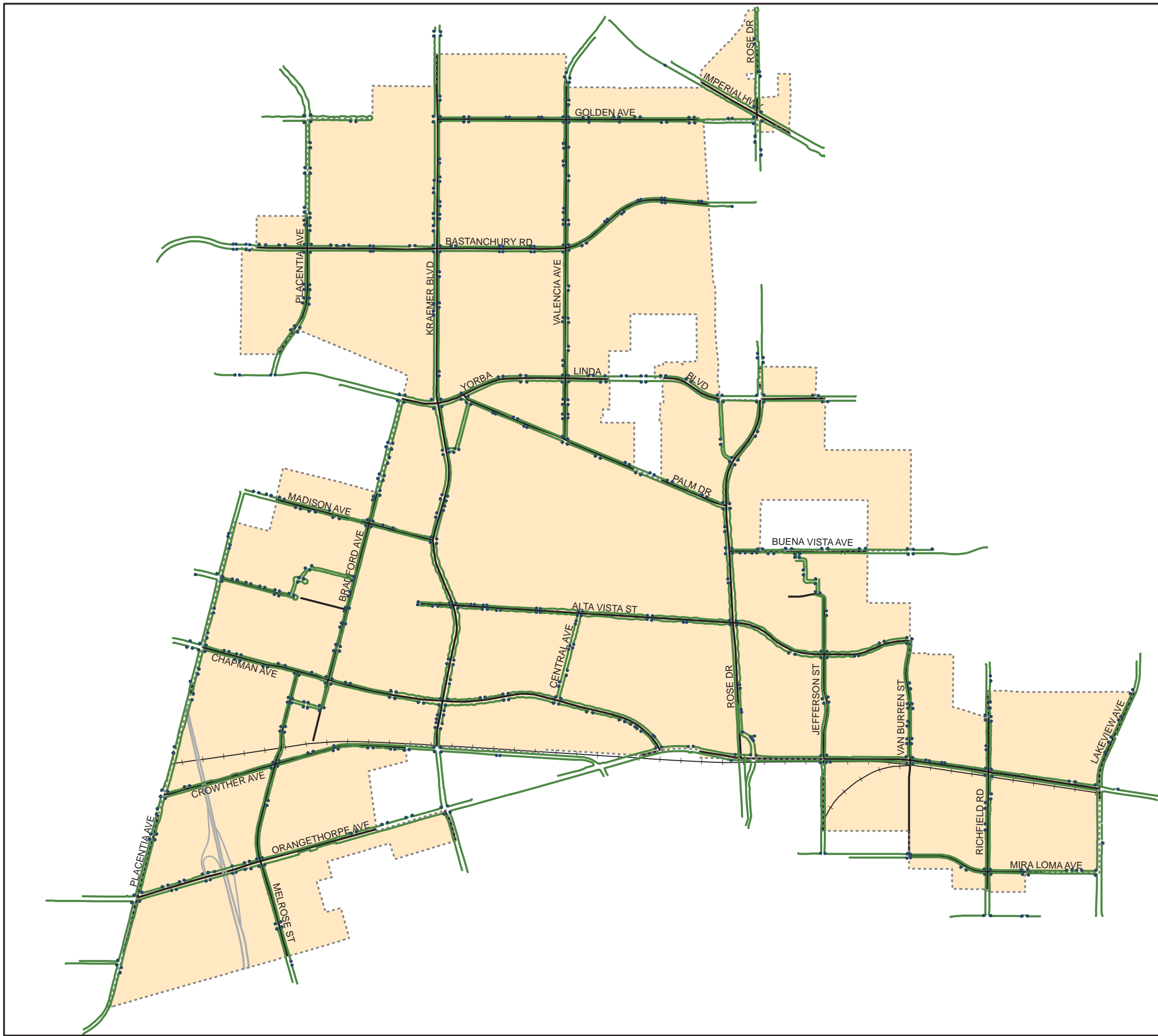


Figure 4-6

## 4.6 RAIL TRANSPORTATION

The Burlington Northern Santa Fe Railway (BNSF) operates a major double-track freight rail line known as the Orange County Gateway along the Orangethorpe Corridor. This rail line connects the Port of Los Angeles with the Inland Empire and Midwest United States. Currently more than 70 freight trains and 12 passenger trains per day use this rail line. By Year 2030 it is forecast that over 150 trains per day will use this line.

The OCTA railroad grade separation (OC Bridges) projects have been finished to physically separate rail and highway traffic at five at-grade rail/highway grade crossings in the City. The grade separation projects eliminated significant delays to north-south vehicle traffic due to increasing freight and passenger rail traffic on the double-track BNSF rail line adjacent to and south of Orangethorpe Avenue. The grade separation locations are as follows, listed from west to east:

- Placentia Avenue north of Crowther Avenue
- Kraemer Boulevard at Crowther Avenue
- Orangethorpe Avenue west of Chapman Avenue
- Rose Drive/Tustin Avenue at Orangethorpe Avenue
- Lakeview Avenue at Orangethorpe Avenue



Plans are also being made for construction of a Metrolink station in Placentia to be located at Melrose Avenue and Crowther Avenue. The construction of the train station is expected to start in 2019. After completion, the station will serve the 91/Perris Valley Line, which currently operates with 15 trains during the weekdays and 4 trains during the weekend.



## 5.0 GENERAL PLAN CONDITIONS

### 5.1 LAND USE SCENARIOS

Two Land Use Scenarios were analyzed in terms of resulting traffic volume forecasts: The “Current General Plan” Scenario, and the “Proposed General Plan” scenario. The analysis of two development intensity scenarios allowed the City to evaluate the potential benefits of development at each respective level versus the potential transportation costs. Potential benefits may include higher economic use of individual development parcels, as well as a higher level of economic activity in the City in general. Potential costs may include improvements to infrastructure that may be needed to support each respective level of development. The following describes the two alternative land use scenarios and compares them in terms of forecast dwelling units, population, and employment.

#### 5.1.1 Current General Plan Scenario

The Current General Plan scenario assumes a relatively low increase in land use intensity in the City. Based on the data extracted from OCTAM 2012 and 2040 models, the social economic data (SED) input for the models for the City of Placentia show an overall growth (from 2012 to 2040) of 11.7% increase in population, 12.6% increase in dwelling units, and 17.6% increase in employment. These changes would be made primarily through redevelopment of existing developed parcels rather than development of currently vacant land. Table 5-1 below shows the summary of SED growth from 2012 base year to 2040 horizontal year for the Current General Plan.

**TABLE 5-1 – CURRENT GENERAL PLAN LAND USE SCENARIO**

Socioeconomic Data	2012 Base Year	Current General Plan (2040)	Net Growth	Percent Growth
Population	51,183	57,949	6,766	11.68%
Dwelling Unit	16,686	19,082	2,396	12.56%
Employment	20,777	25,225	4,448	17.63%

Source: OCTAM

#### 5.1.2 Proposed General Plan Scenario

The Proposed General Plan scenario was developed based on the latest land use information obtained from the City. As indicated in Table 5-2, most industrial and manufacturing uses under the Current General Plan scenario were converted to high density residential uses in the Proposed General Plan scenario.

**TABLE 5-2 – GENERAL PLAN LAND USE SCENARIO COMPARISON, AREA IN ACRES**

Land Use	Current General Plan	Proposed General Plan	Proposed General Plan minus Current General Plan
Commercial	137.1	137.1	0.0
Commercial Manufacturing	47.2	43.6	-3.7
High Density Residential	136.3	155.4	19.2
Industrial	308.4	292.9	-15.5
Low Density Residential	1,265.6	1,265.6	0.0
Medium Density Residential	400.3	392.8	-7.5
Office	31.5	25.5	-6.0
Old Town	28.6	28.6	0.0
Parks	93.5	99.2	5.7
Parkway Vista	17.6	17.6	0.0
Planned Community	337.0	319.8	-17.2
Railroad	25.1	25.1	0.0
Schools and Institutional	211.5	224.8	13.3
Specific Plan	310.5	322.2	11.8
TOD	21.7	21.7	0.0
Grand Total		3,372.1	3,372.1

Source: City of Placentia

## 5.2 FUTURE TRAFFIC VOLUME FORECAST

### 5.2.1 Current General Plan Traffic Volume Forecast

To produce the future year 2040 traffic volume forecasts for the Current General Plan land use scenario, a methodology known as NCHRP-765 based on the report Analytic Travel Forecasting Approaches for Project-Level Planning and Design (National Cooperative Highway Research Program Report 765, Transportation Research Board, 2014) was used that adjusts existing turning movement volumes based on expected growth in approach volumes as reported by the OCTAM. Traffic flow conservation was then applied to ensure the continuity of traffic flow. The General Plan daily traffic volumes were developed in a similar fashion by applying the growth in daily OCTAM volumes to the baseline existing daily traffic volumes.

To be conservative, the future year 2040 intersection volumes were compared to those of existing year with a ten percent total growth rate. If the 2040 volumes were lower, the existing year volume with a 10 percent total growth rate will be applied. The OCTAM traffic forecast calculation worksheets for the Current General Plan scenario are included in Appendix D of this report.



### 5.2.2 Proposed General Plan Traffic Volume Forecast

Figure 5-1 includes zones (group of parcels) where the land use was revised from the Current General Plan to the Proposed General Plan. The parcels are grouped into ten zones with the same land use change. The area in acres and the Current/Proposed General Plan land use are listed in the follow table.

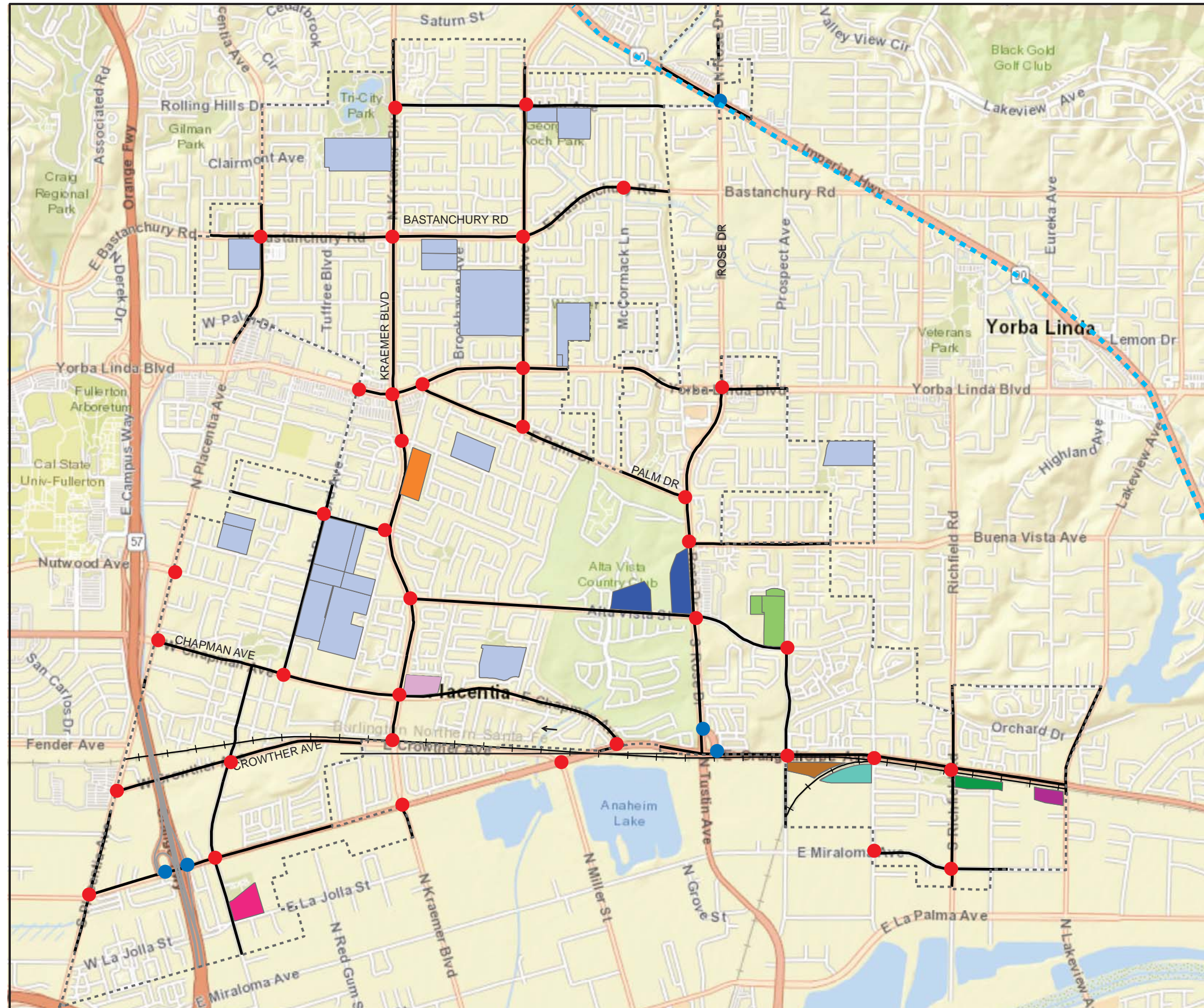
**TABLE 5-3 – LAND USE REVISION SUMMARY**

Zone	Current GP Land Use	Proposed GP Land Use	Area in Acres
Zone 1	Light industrial	High Density Residential	3.65
Zone 2	Industrial	High Density Residential	4.12
Zone 3	Industrial	High Density Residential	6.37
Zone 4	Industrial	High Density Residential	5.03
Zone 5	Parks	Schools & Institution	7.27
Zone 6	Office	Schools & Institution	6.04
Zone 7	Medium Density Residential	Specific Plan	7.51
Zone 8	Planned Community	Specific Plan	17.24
Zone 9	Schools	Schools & Institution	211.51
Zone 10	Specific Plan	Parks	13
Total			281.74



**CITY of PLACENTIA  
General Plan Update**

**Revised Land Use Category  
Locations from Current  
General Plan to  
Proposed General Plan**



**Legend**

- Zone 1: From Light Industrial to High Density Residential
- Zone 2: From Industrial to High Density Residential
- Zone 3: From Industrial to High Density Residential
- Zone 4: From Industrial to High Density Residential
- Zone 5: From Park to Schools & Institution
- Zone 6: From Office to Schools & Institution
- Zone 7: From Medium Density Residential to Specific Plan
- Zone 8: From Planned Community to Specific Plan
- Zone 9: From Schools to Schools and Institutional
- Zone 10: From Specific Plan to Parks
- Placentia City Limits
- Study Intersections
- Study CMP Intersections
- CMP Routes

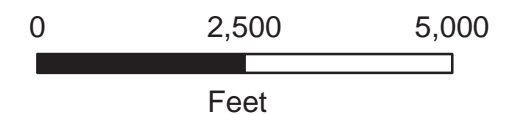


Figure 5-1

Among the ten zones with revised land use, only zones 1 to 4 would have impact on traffic volumes. Zone 5 is currently the Melrose Elementary School; Zone 6 is currently the Placentia Library District; Zone 10 is currently the Placentia Champions Sports Complex. For these three zones, the existing land use already matches the Proposed General Plan land use. Therefore, the traffic generated by these projects has been reflected in the existing traffic counts and the future year forecasted traffic volumes.

Zone 7 is changed from medium density residential to Specific Plan. Zone 8 is changed from Planned Community to Specific Plan. The City confirmed that no detailed land use is expected to be changed. All the parcels in zone 9 are currently used by schools or institutions. Therefore, no land use is expected to be changed either.

Figure 5-2 shows the location of Zones 1 to 4. The net trips generated from the land use changes were calculated based on Institute of Transportation Engineers (ITE) trip rates (10th Edition) and distributed to the roadway network and added to the Current General Plan traffic volumes to represent the Proposed General Plan condition. The traffic generation and distribution assumptions for the Proposed General Plan land use scenario are included in Appendix E. The trip generation of the four zones is summarized in Table 5-4.

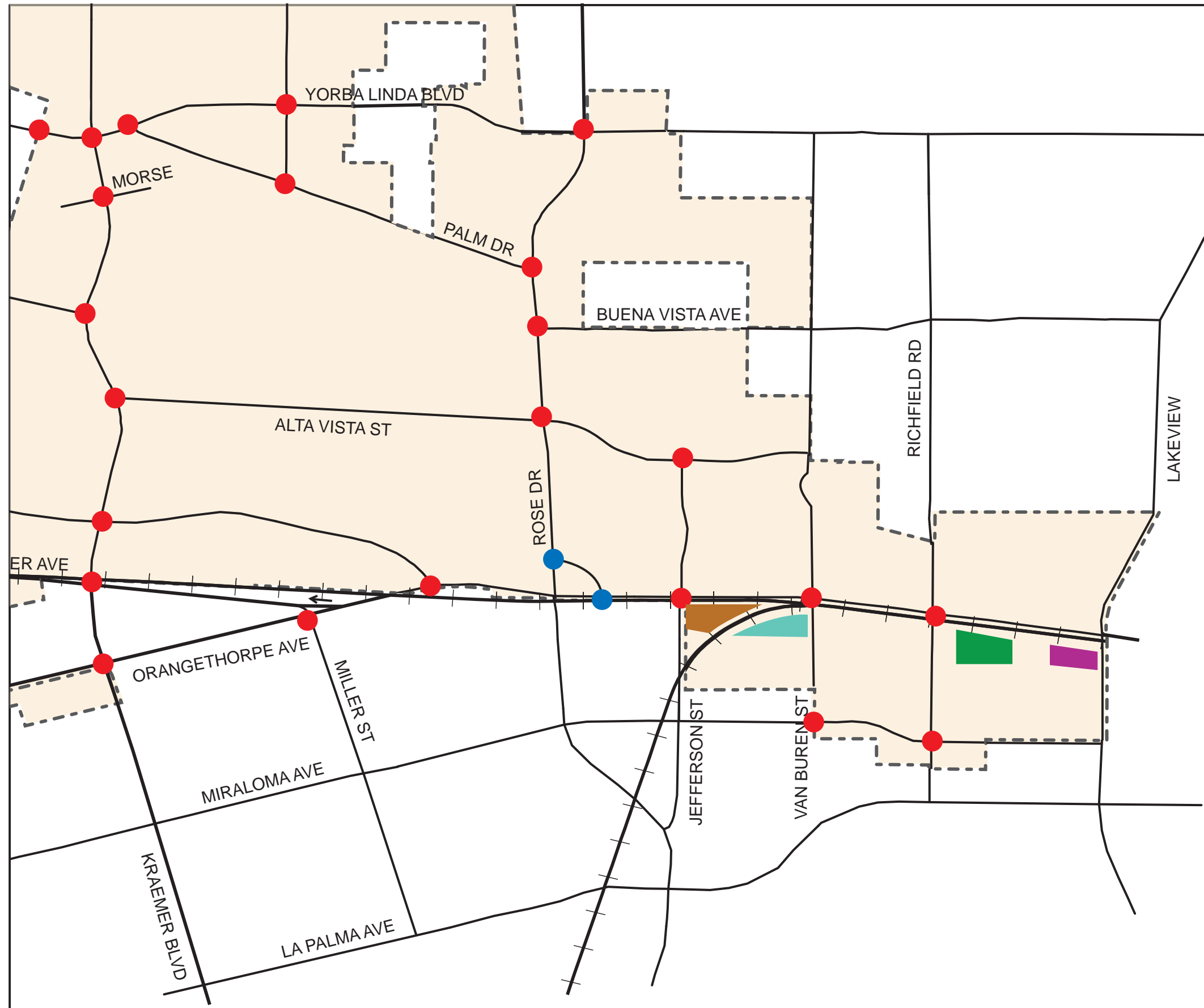
**TABLE 5-4 – PROPOSED GENERAL PLAN TRIP GENERATION SUMMARY**

Zone	Current GP Land Use	Proposed GP Land Use	Area in Acres	Daily Total	AM Peak (IN)	AM Peak (OUT)	AM Peak Total	PM Peak (IN)	PM Peak (OUT)	PM Peak Total
1	Light industrial	High Density Residential	3.65	338	(10)	21	11	21	(1)	20
2	Industrial	High Density Residential	4.12	439	(1)	24	23	24	7	31
3	Industrial	High Density Residential	6.37	679	(3)	38	35	38	10	48
4	Industrial	High Density Residential	5.03	536	(3)	30	27	30	7	37
Total				1992	(17)	113	96	113	23	136



**CITY of PLACENTIA  
General Plan Update**

**Revised Land Use Zones  
with Traffic Impacts from  
Current General Plan to  
Proposed General Plan**



**Legend**

- Zone 1: From Light Industrial to High Density Residential
- Zone 2: From Industrial to High Density Residential
- Zone 3: From Industrial to High Density Residential
- Zone 4: From Industrial to High Density Residential
- Placentia City Limits
- ++++ Railroad
- Study Intersections
- Study CMP Intersections

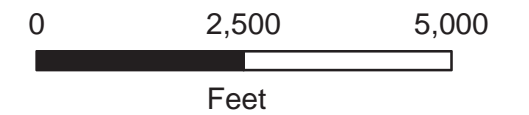


Figure 5-2

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## 5.3 CURRENT GENERAL PLAN TRAFFIC CONDITIONS

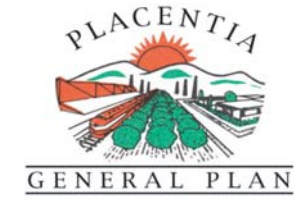
### 5.3.1 Current General Plan Roadway Level-of-service

Figure 5-3 shows the Current General Plan (year 2040) daily traffic volume forecast for Placentia.

Table 5-5 presents the street segment daily traffic forecast and level-of-service for the 62 analyzed roadway segments, based on the 2017 OCTA MPAH classifications. Table 5-5 also presents the number of lanes and LOS E capacity of each roadway segment. Level-of-service is based on the thresholds presented previously in Table 2-2.

All of the roadway segments are expected to operate at acceptable conditions under the Proposed General Plan Scenario with 2017 OCTA MPAH classification capacity.

Rose Drive between City Limit south of Golden Avenue and North City Limit is currently operating at a LOS value of E under the existing condition. Under the MPAH, the roadway will be upgraded from 4-lane undivided road to 6-lane divided road. With increased capacity, the roadway segment's level-of-service would be improved to a value of B.



**CITY of PLACENTIA**  
General Plan Update

**Current General Plan (Year 2040)**  
Daily Traffic Volumes

**Legend**

- Placentia City Limits
- +++++ Railroad
- x,xxx Average Daily Traffic

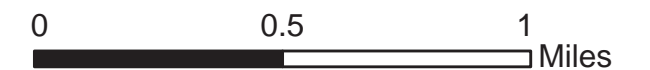
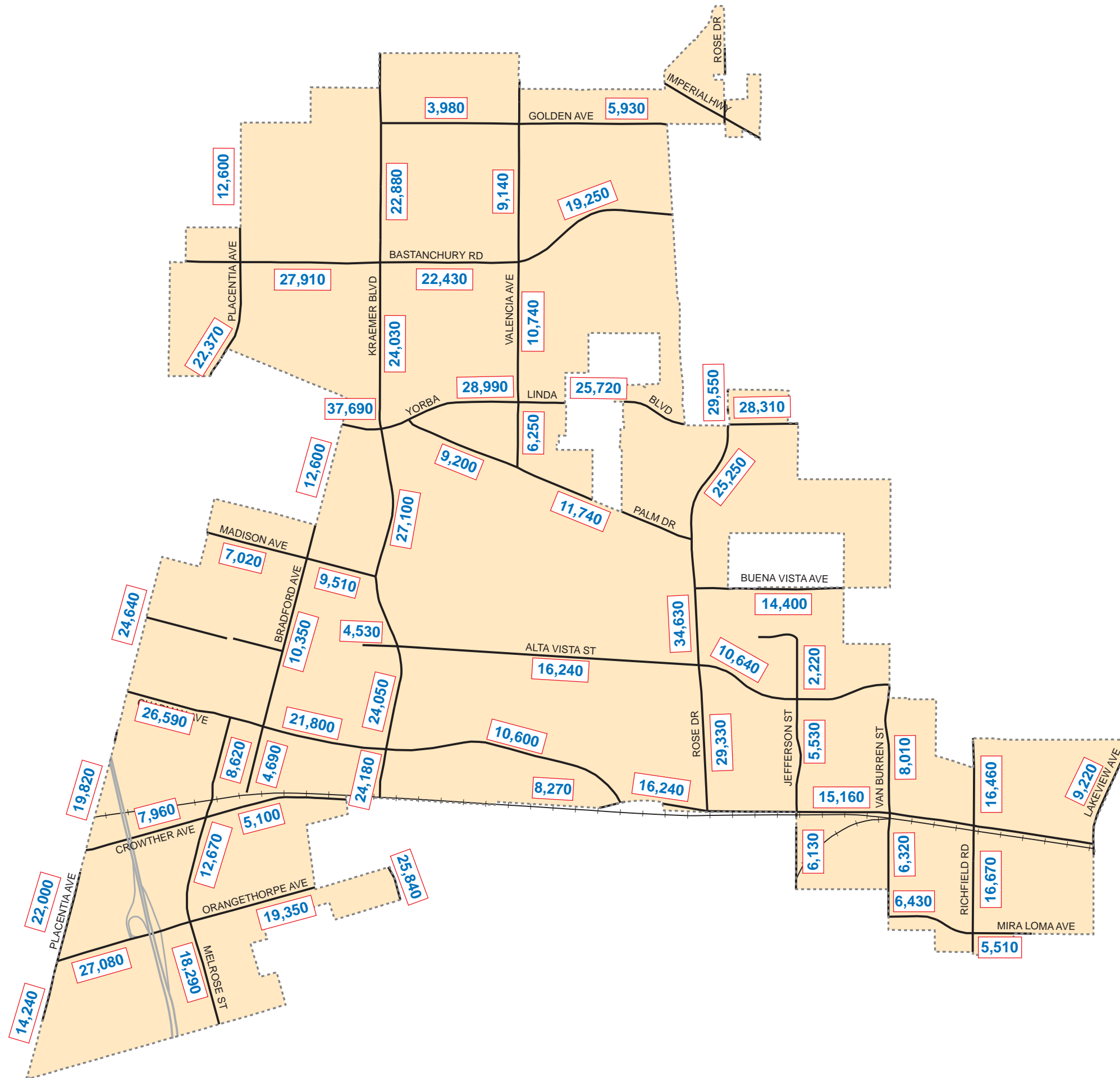


Figure 5-3

**TABLE 5-5 – ROADWAY LEVEL-OF-SERVICE, CURRENT GENREAL PLAN (YEAR 2040), 2017 OCTA MPAH CLASSIFICATION**

ID	Roadway Segment	MPAH Definition		LOS E Capacity	Current General Plan		
		Classification	Lanes		ADT	V/C	LOS
<b>Golden Avenue</b>							
1	Valencia Avenue to East City Limit	Divided Collector	2D	18,750	3,980	0.212	A
2	Kramer Boulevard to Valencia Avenue	Divided Collector	2D	18,750	5,930	0.316	A
<b>Bastanchury Road</b>							
3	West City Limits to Kraemer Boulevard	Primary	6D	56,300	27,910	0.496	A
4	Kraemer Boulevard to Valencia Avenue	Primary	6D	56,300	22,430	0.398	A
5	Valencia Avenue to East City Limit	Modified Primary	4D	37,500	19,250	0.513	A
<b>Yorba Linda Boulevard</b>							
6	Bradford Avenue to Kramer Boulevard	Modified Major	6D	56,300	37,690	0.669	B
7	Kramer Boulevard to Valencia Avenue	Modified Major	6D	56,300	28,990	0.515	A
8	Valencia Avenue to Rose Drive	Modified Major	6D	56,300	25,720	0.457	A
9	Rose Drive to Eastern City Limit	Modified Major	6D	56,300	28,310	0.503	A
<b>Palm Drive</b>							
10	Yorba Linda Boulevard to Valencia Avenue	Modified Primary	4U	25,000	9,200	0.368	A
11	Valencia Avenue to Rose Drive	Modified Primary	4U	25,000	11,740	0.470	A
<b>Madison Avenue</b>							
12	West City Limits to Bradford Avenue	Secondary	4U	25,000	7,020	0.281	A
13	Bradford Avenue to Kraemer Boulevard	Secondary	4U	25,000	9,510	0.380	A
<b>Buena Vista Avenue</b>							
14	Rose Drive to East City Limit	Primary	4U	25,000	14,400	0.576	A
<b>Alta Vista Street</b>							
15	Angelina Drive to Kramer Boulevard	Modified Primary	4U	25,000	4,530	0.181	A
16	Kramer Boulevard to Rose Drive	Modified Primary	4U	25,000	16,240	0.650	B
17	Rose Drive to Van Buren Street	Modified Primary	4U	25,000	10,640	0.426	A
<b>Chapman Avenue</b>							
18	Placentia Avenue to Bradford Avenue	Modified Primary	4D	37,500	26,590	0.709	C
19	Bradford Avenue to Kraemer Boulevard	Modified Primary	4D	37,500	21,800	0.581	A
20	Kraemer Boulevard to Orangethorpe Avenue	Primary	4D	37,500	10,600	0.283	A
<b>Crowther Avenue</b>							
21	Placentia Avenue to Melrose Street	Divided Collector	2D	18,750	7,960	0.425	A
22	Melrose Street to East City Limit	Divided Collector	2D	18,750	5,100	0.272	A
<b>Orangethorpe Avenue</b>							

ID	Roadway Segment	MPAH Definition		LOS E Capacity	Current General Plan		
		Classification	Lanes		ADT	V/C	LOS
23	Placentia Avenue to Melrose Street	Primary	6D	56,300	27,080	0.481	A
24	Melrose Street to Kraemer Boulevard	Primary	6D	56,300	19,350	0.344	A
25	City Limit w/o Chapman Ave. to Chapman Ave.	Primary	6D	56,300	8,270	0.147	A
26	Chapman Avenue to Rose Drive	Primary	6D	56,300	16,240	0.288	A
27	Rose Drive to East City Limit	Primary	6D	56,300	15,160	0.269	A
<b>Miraloma Avenue 1</b>							
28	Van Buren Street to Richfield Road	Modified Secondary	4U	25,000	6,430	0.257	A
29	Richfield Road to Lakeview Avenue	Modified Secondary	4U	25,000	5,510	0.220	A
<b>Placentia Avenue</b>							
30	South City Limit to Orangethorpe Avenue	Secondary	4U	25,000	14,240	0.570	A
31	Orangethorpe Avenue to Crowther Avenue	Secondary	4D	37,500	22,000	0.587	A
32	Crowther Avenue to Chapman Avenue	Secondary	4D	37,500	19,820	0.529	A
33	Chapman Avenue to n/o Primrose Avenue	Secondary	4D	37,500	24,640	0.657	B
34	Macadamia Lane to Bastanchury Road	Secondary	4D	37,500	22,370	0.597	A
35	Bastanchury Road to Rolling Hills Drive	Secondary	4D	37,500	12,600	0.336	A
<b>Melrose Street</b>							
36	South City Limit to Orangethorpe Avenue	Secondary	4U	25,000	18,290	0.732	C
37	Orangethorpe Avenue to Crowther Avenue	Secondary	4U	25,000	12,670	0.507	A
38	Crowther Avenue to Santa Fe Avenue	Secondary	4U	25,000	8,620	0.345	A
<b>Bradford Avenue</b>							
39	Santa Fe Avenue to Chapman Avenue	Secondary	4U	25,000	4,690	0.188	A
40	Chapman Avenue to Madison Avenue	Secondary	4U	25,000	10,350	0.414	A
41	Madison Avenue to North City Limit	Secondary	4U	25,000	12,600	0.504	A
<b>Kraemer Boulevard</b>							
42	South City Limits to Orangethorpe Avenue	Modified Primary	6D	56,300	25,840	0.459	A
43	Crowther Avenue to Chapman Avenue	Primary	6D	56,300	24,180	0.429	A
44	Chapman Avenue to Madison Avenue	Primary	6D	56,300	24,050	0.427	A
45	Madison Avenue to Yorba Linda Boulevard	Primary	6D	56,300	27,100	0.481	A



ID	Roadway Segment	MPAH Definition		LOS E Capacity	Current General Plan		
		Classification	Lanes		ADT	V/C	LOS
46	Yorba Linda Boulevard to Bastanchury Road	Primary	6D	56,300	24,030	0.427	A
47	Bastanchury Road to North City Limit	Primary	6D	56,300	22,880	0.406	A
<b>Valencia Avenue</b>							
48	Palm Drive to Yorba Linda Boulevard	Secondary	4U	25,000	6,250	0.250	A
49	Yorba Linda Boulevard to Bastanchury Road	Secondary	4U	25,000	10,740	0.430	A
50	Bastanchury Road to Northern City Limit	Secondary	4U	25,000	9,140	0.366	A
<b>Rose Drive</b>					0		
51	Orangethorpe Avenue to Alta Vista Street	Modified Major	6D	56,300	29,330	0.521	A
52	Alta Vista Street to Palm Drive	Modified Major	6D	56,300	34,630	0.615	B
53	Palm Drive to Yorba Linda Boulevard		6D	56,300	25,250	0.448	A
54	City Limit s/o Golden Avenue to North City Limit	Modified Major	6D	56,300	29,550	0.525	A
<b>Jefferson Street</b>							
55	South City Limits to Orangethorpe Avenue	Secondary	4U	25,000	6,130	0.245	A
56	Orangethorpe Avenue to Alta Vista Street	Secondary	4U	25,000	5,530	0.221	A
57	Alta Vista Street to Garten Drive	Secondary	4U	25,000	2,220	0.089	A
<b>Van Buren Street 2</b>							
58	South City Limits to Orangethorpe Avenue	Collector	2U	12,500	6,320	0.506	A
59	Orangethorpe Avenue to North City Limit	Collector	2U	12,500	8,010	0.641	B
<b>Richfield Road</b>							
60	South City Limits to Orangethorpe Avenue	Secondary	4U	25,000	16,670	0.667	B
61	Orangethorpe Avenue to North City Limit	Secondary	4U	25,000	16,460	0.658	B
<b>Lakeview Avenue</b>							
62	South City Limit to North City Limit	Primary	4D	37,500	9,220	0.246	A

Abbreviations: 2U: 2 Lane Undivided. 2D: 2 Lane Divided. 3D: 3 Lane Divided. 4U: 4 Lane Undivided. 4D: 4 Lane Divided. 5D: 5 Lane Divided. 6D: 6 Lane Div. ADT: Average Daily Traffic Volume. V/C: Volume to Capacity Ratio. LOS: level-of-service

Table 5-6 presents the street segment daily traffic forecast and level-of-service for the 62 analyzed roadway segments, based on the existing configuration and capacity. Table 5-4 also presents the number of lanes and LOS E capacity of each roadway segment. Level-of-service is based on the thresholds presented previously in Table 2-2.

The majority of the roadway segments are expected to operate at acceptable conditions under the Proposed General Plan Scenario with existing capacity. The following segments are expected to operate below acceptable levels, and the proposed improvements and recommendations for this roadway segment are discussed in Section 6:

- Chapman Avenue between Placentia Avenue and Bradford Avenue
- Placentia Avenue between Chapman Avenue and Primrose Avenue
- Kraemer Boulevard between South City Limit and Orangethorpe Avenue
- Rose Drive between Alta Vista Street and Palm Drive
- Rose Drive between City Limit south of Golden Avenue to North City Limit

**TABLE 5-6 – ROADWAY LEVEL-OF-SERVICE, CURRENT GENREAL PLAN (YEARY 2040), EXISTING CONFIGURATION**

ID	Roadway Segment	Existing Configuration		LOS E Capacity	Current General Plan		
		Classification	Lanes		ADT	V/C	LOS
<b>Golden Avenue</b>							
1	Valencia Avenue to East City Limit	Divided Collector	2U	12,500	3,980	0.318	A
2	Kramer Boulevard to Valencia Avenue	Divided Collector	2U	12,500	5,930	0.474	A
<b>Bastanchury Road</b>							
3	West City Limits to Kraemer Boulevard	Primary	4D	37,500	27,910	0.744	C
4	Kraemer Boulevard to Valencia Avenue	Primary	4D	37,500	22,430	0.598	A
5	Valencia Avenue to East City Limit	Modified Primary	4D	37,500	19,250	0.513	A
<b>Yorba Linda Boulevard</b>							
6	Bradford Avenue to Kramer Boulevard	Modified Major	6D	56,300	37,690	0.669	B
7	Kramer Boulevard to Valencia Avenue	Modified Major	4D	37,500	28,990	0.773	C
8	Valencia Avenue to Rose Drive	Modified Major	4D	37,500	25,720	0.686	B
9	Rose Drive to Eastern City Limit	Modified Major	4D	37,500	28,310	0.755	C
<b>Palm Drive</b>							
10	Yorba Linda Boulevard to Valencia Avenue	Modified Primary	2U	12,500	9,200	0.736	C
11	Valencia Avenue to Rose Drive	Modified Primary	4D	37,500	11,740	0.313	A
<b>Madison Avenue</b>							
12	West City Limits to Bradford Avenue	Secondary	2U	12,500	7,020	0.562	A
13	Bradford Avenue to Kraemer	Secondary	2U	12,500	9,510	0.761	C

ID	Roadway Segment	Existing Configuration		LOS E Capacity	Current General Plan		
		Classification	Lanes		ADT	V/C	LOS
	Boulevard						
	<b>Buena Vista Avenue</b>						
14	Rose Drive to East City Limit	Primary	4D	37,500	14,400	0.384	A
	<b>Alta Vista Street</b>						
15	Angelina Drive to Kramer Boulevard	Modified Primary	2D	18,750	4,530	0.242	A
16	Kramer Boulevard to Rose Drive	Modified Primary	4U	25,000	16,240	0.650	B
17	Rose Drive to Van Buren Street	Modified Primary	4U	25,000	10,640	0.426	A
	<b>Chapman Avenue</b>						
18	Placentia Avenue to Bradford Avenue	Modified Primary	4U	25,000	26,590	1.064	F
19	Bradford Avenue to Kraemer Boulevard	Modified Primary	4U	25,000	21,800	0.872	D
20	Kraemer Boulevard to Orangethorpe Avenue	Primary	4D	37,500	10,600	0.283	A
	<b>Crowther Avenue</b>						
21	Placentia Avenue to Melrose Street	Divided Collector	2U	12,500	7,960	0.637	B
22	Melrose Street to East City Limit	Divided Collector	2U	12,500	5,100	0.408	A
	<b>Orangethorpe Avenue</b>						
23	Placentia Avenue to Melrose Street	Primary	6D	56,300	27,080	0.481	A
24	Melrose Street to Kraemer Boulevard	Primary	4U	25,000	19,350	0.774	C
25	City Limit w/o Chapman Ave. to Chapman Ave.	Primary	6D	56,300	8,270	0.147	A
26	Chapman Avenue to Rose Drive	Primary	6D	56,300	16,240	0.288	A
27	Rose Drive to East City Limit	Primary	4U	25,000	15,160	0.606	B
	<b>Miraloma Avenue 1</b>						
28	Van Buren Street to Richfield Road	Modified Secondary	4U	25,000	6,430	0.257	A
29	Richfield Road to Lakeview Avenue	Modified Secondary	4U	25,000	5,510	0.220	A
	<b>Placentia Avenue</b>						
30	South City Limit to Orangethorpe Avenue	Secondary	4U	25,000	14,240	0.570	A
31	Orangethorpe Avenue to Crowther Avenue	Secondary	4D	37,500	22,000	0.587	A
32	Crowther Avenue to Chapman Avenue	Secondary	4D	37,500	19,820	0.529	A
33	Chapman Avenue to n/o Primrose Avenue	Secondary	4U	25,000	24,640	0.986	E
34	Macadamia Lane to Bastanchury Road	Secondary	4D	37,500	22,370	0.597	A
35	Bastanchury Road to Rolling Hills Drive	Secondary	4D	37,500	12,600	0.336	A
	<b>Melrose Street</b>						

ID	Roadway Segment	Existing Configuration		LOS E Capacity	Current General Plan		
		Classification	Lanes		ADT	V/C	LOS
36	South City Limit to Orangethorpe Avenue	Secondary	4U	25,000	18,290	0.732	C
37	Orangethorpe Avenue to Crowther Avenue	Secondary	4U	25,000	12,670	0.507	A
38	Crowther Avenue to Santa Fe Avenue	Secondary	3D	28,125	8,620	0.306	A
<b>Bradford Avenue</b>							
39	Santa Fe Avenue to Chapman Avenue	Secondary	2U	12,500	4,690	0.375	A
40	Chapman Avenue to Madison Avenue	Secondary	2U	12,500	10,350	0.828	D
41	Madison Avenue to North City Limit	Secondary	4U	25,000	12,600	0.504	A
<b>Kraemer Boulevard</b>							
42	South City Limits to Orangethorpe Avenue	Modified Primary	4U	25,000	25,840	1.034	F
43	Crowther Avenue to Chapman Avenue	Primary	6D	56,300	24,180	0.429	A
44	Chapman Avenue to Madison Avenue	Primary	4D	37,500	24,050	0.641	B
45	Madison Avenue to Yorba Linda Boulevard	Primary	4D	37,500	27,100	0.723	C
46	Yorba Linda Boulevard to Bastanchury Road	Primary	4D	37,500	24,030	0.641	B
47	Bastanchury Road to North City Limit	Primary	4D	37,500	22,880	0.610	B
<b>Valencia Avenue</b>							
48	Palm Drive to Yorba Linda Boulevard	Secondary	4U	25,000	6,250	0.250	A
49	Yorba Linda Boulevard to Bastanchury Road	Secondary	4U	25,000	10,740	0.430	A
50	Bastanchury Road to Northern City Limit	Secondary	4U	25,000	9,140	0.366	A
<b>Rose Drive</b>							
51	Orangethorpe Avenue to Alta Vista Street	Modified Major	4D	37,500	29,330	0.782	C
52	Alta Vista Street to Palm Drive	Modified Major	4D	37,500	34,630	0.923	E
53	Palm Drive to Yorba Linda Boulevard		4D	37,500	25,250	0.673	B
54	City Limit s/o Golden Avenue to North City Limit	Modified Major	4U	25,000	29,550	1.182	F
<b>Jefferson Street</b>							
55	South City Limits to Orangethorpe Avenue	Secondary	2U	12,500	6,130	0.490	A
56	Orangethorpe Avenue to Alta Vista Street	Secondary	4U	25,000	5,530	0.221	A
57	Alta Vista Street to Garten Drive	Secondary	2U	12,500	2,220	0.178	A
<b>Van Buren Street 2</b>							
58	South City Limits to Orangethorpe Avenue	Collector	2U	12,500	6,320	0.506	A

ID	Roadway Segment	Existing Configuration		LOS E Capacity	Current General Plan		
		Classification	Lanes		ADT	V/C	LOS
59	Orangethorpe Avenue to North City Limit	Collector	2U	12,500	8,010	0.641	B
<b>Richfield Road</b>							
60	South City Limits to Orangethorpe Avenue	Secondary	4U	25,000	16,670	0.667	B
61	Orangethorpe Avenue to North City Limit	Secondary	4U	25,000	16,460	0.658	B
<b>Lakeview Avenue</b>							
62	South City Limit to North City Limit	Primary	4D	37,500	9,220	0.246	A

Abbreviations: 2U: 2 Lane Undivided. 2D: 2 Lane Divided. 3D: 3 Lane Divided.4U: 4 Lane Undivided. 4D: 4 Lane Divided. 5D: 5 Lane Divided. 6D: 6 Lane Div. ADT: Average Daily Traffic Volume. V/C: Volume to Capacity Ratio. LOS: level-of-service

### 5.3.2 Current General Plan Intersection Level-of-service

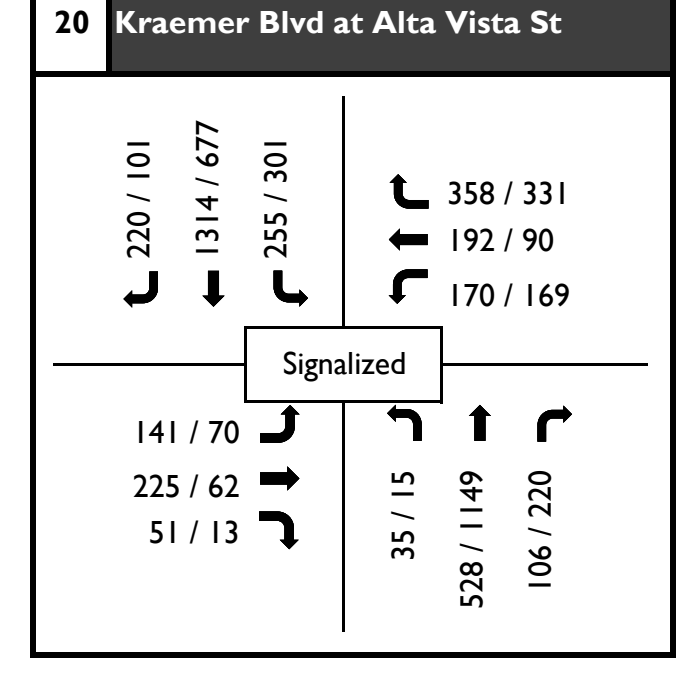
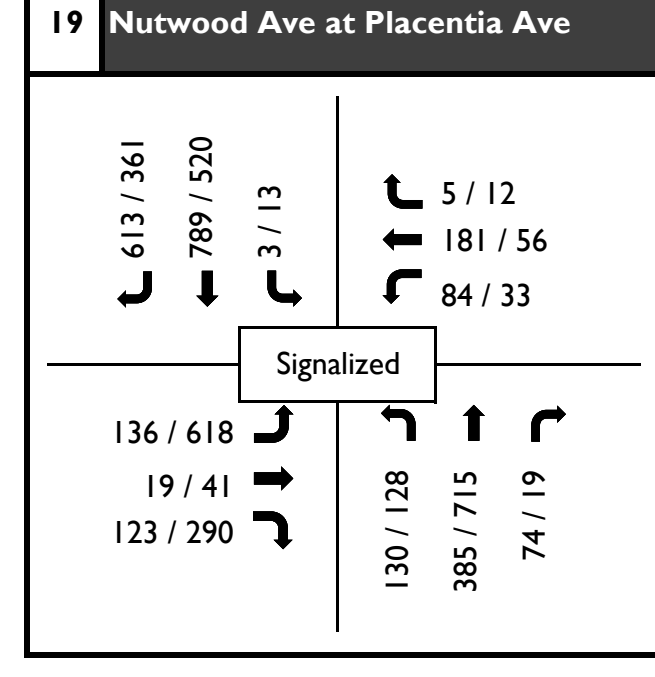
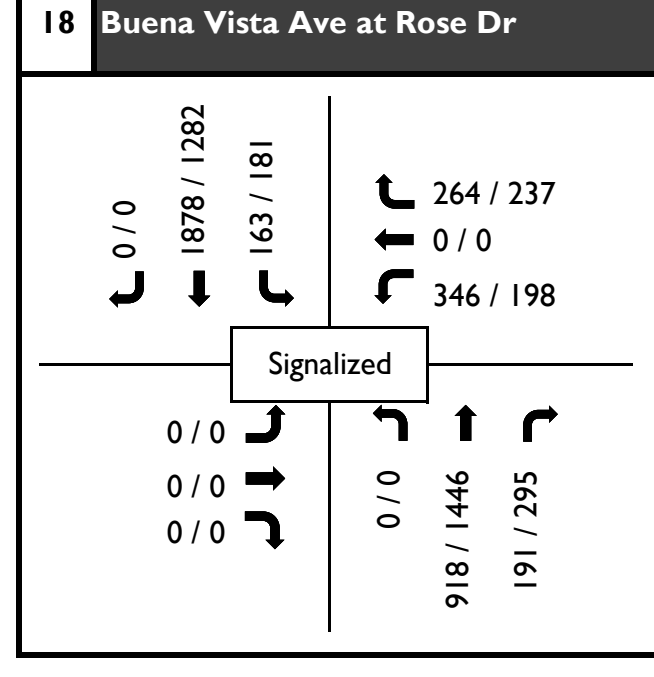
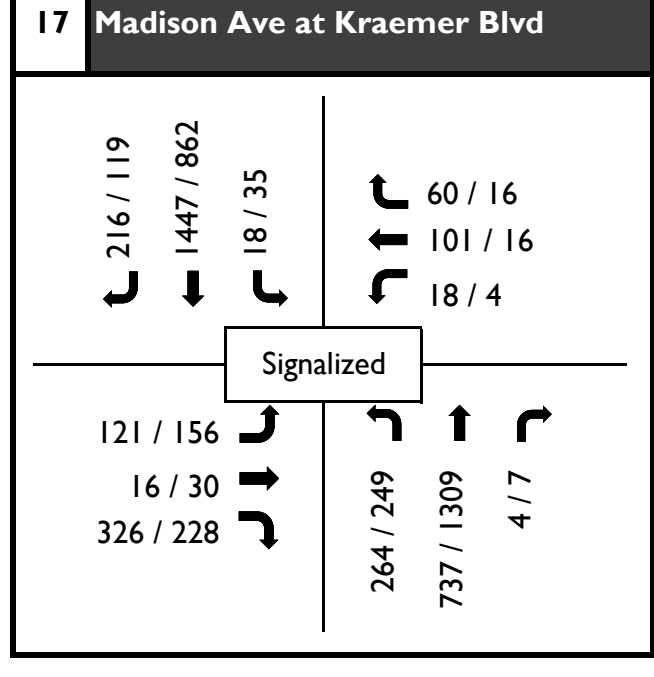
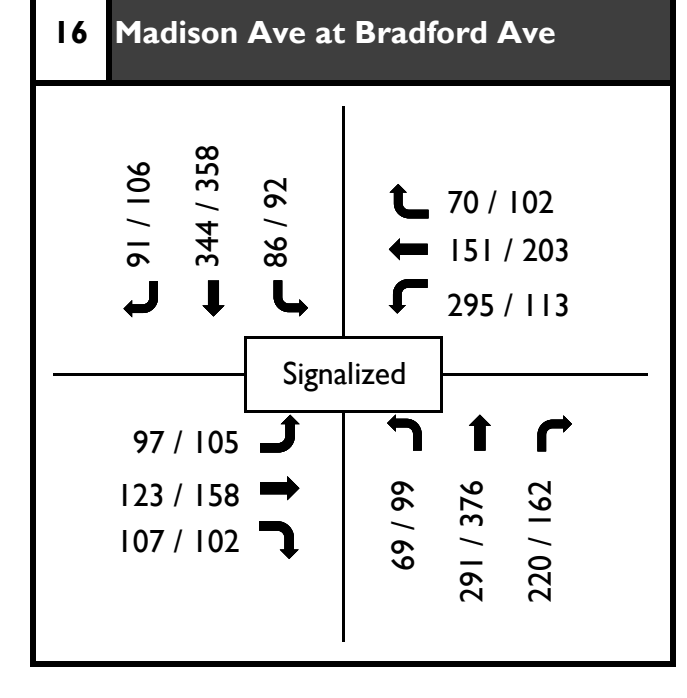
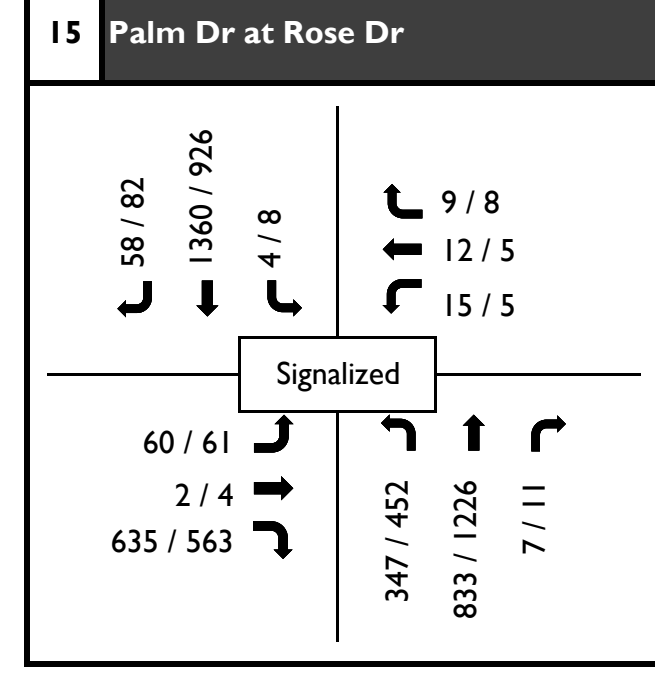
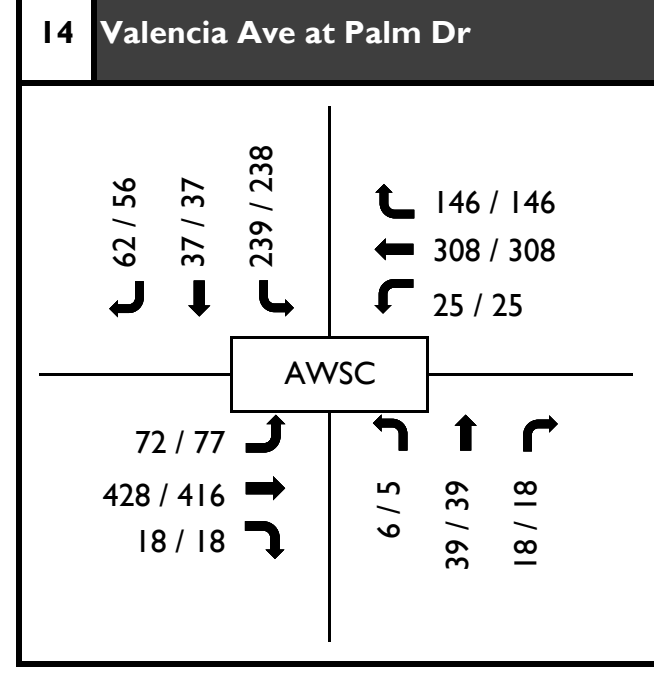
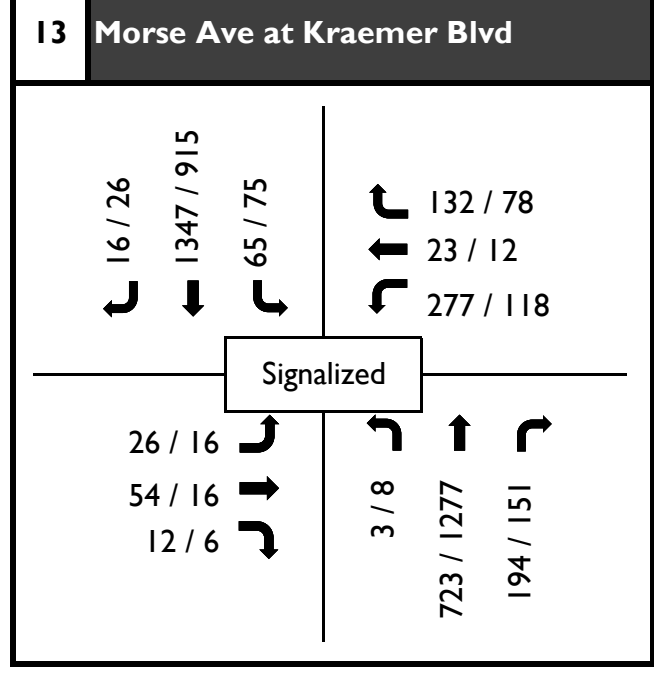
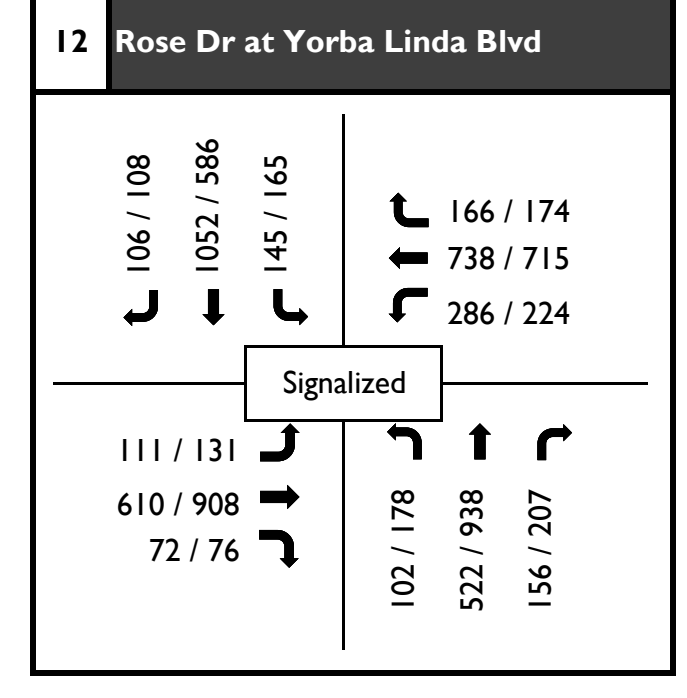
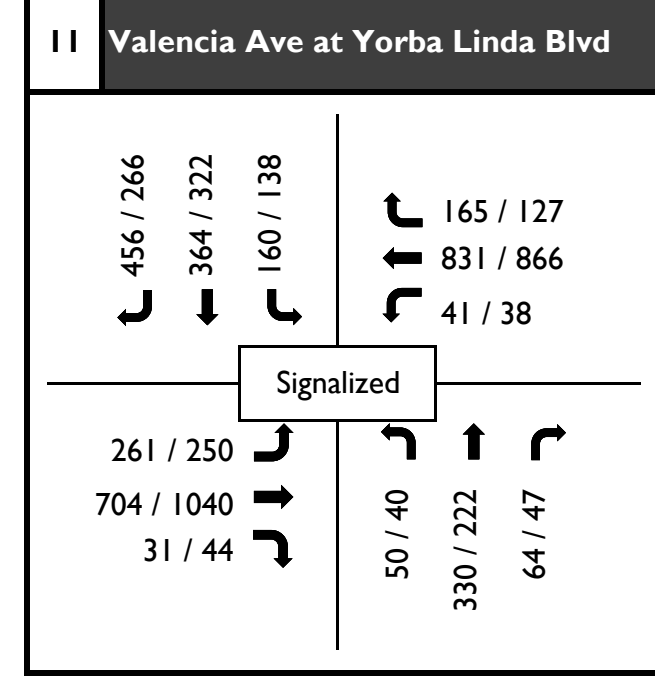
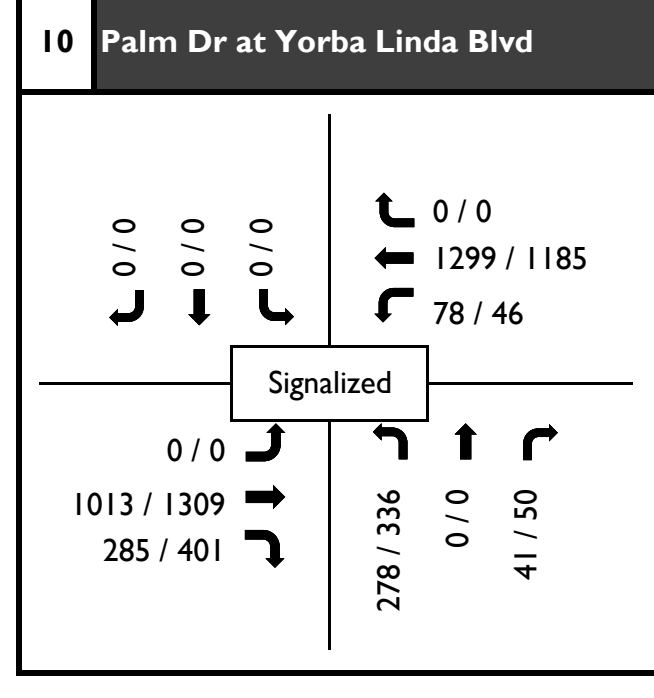
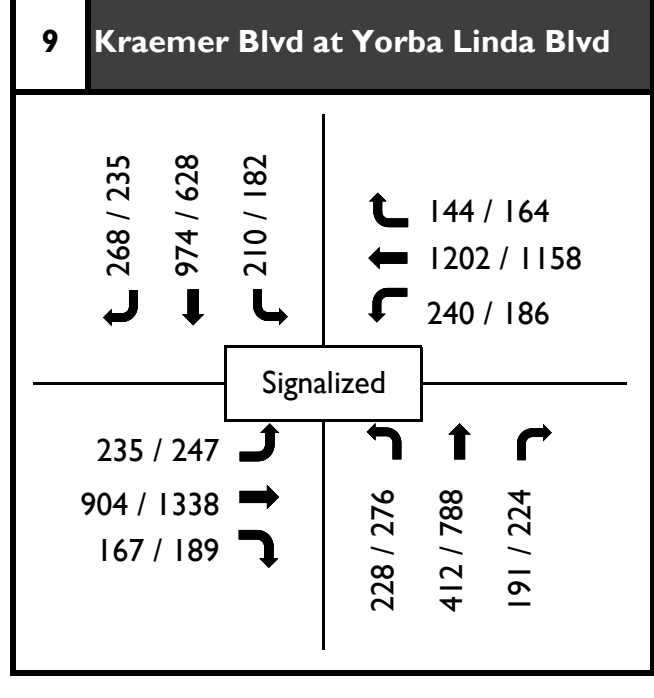
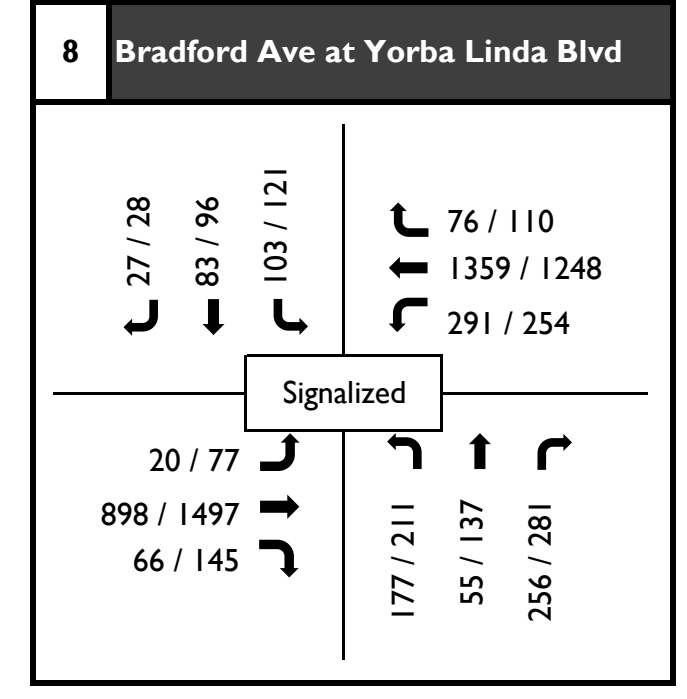
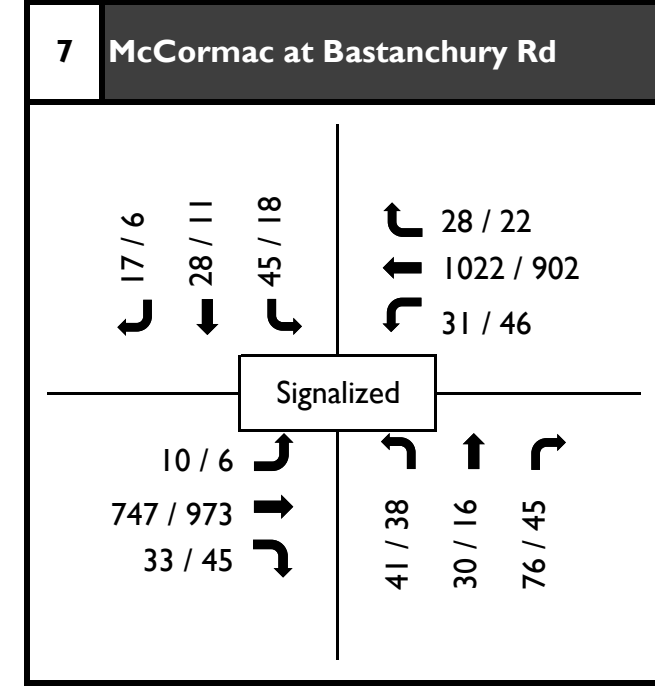
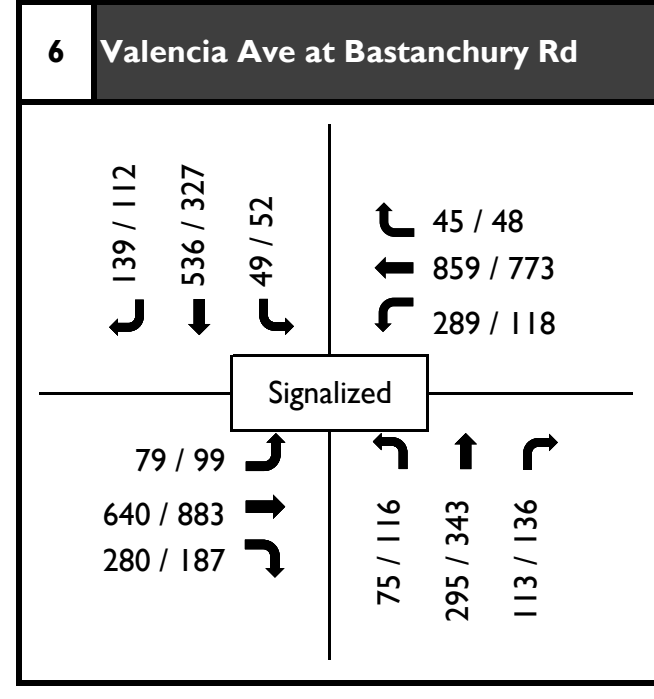
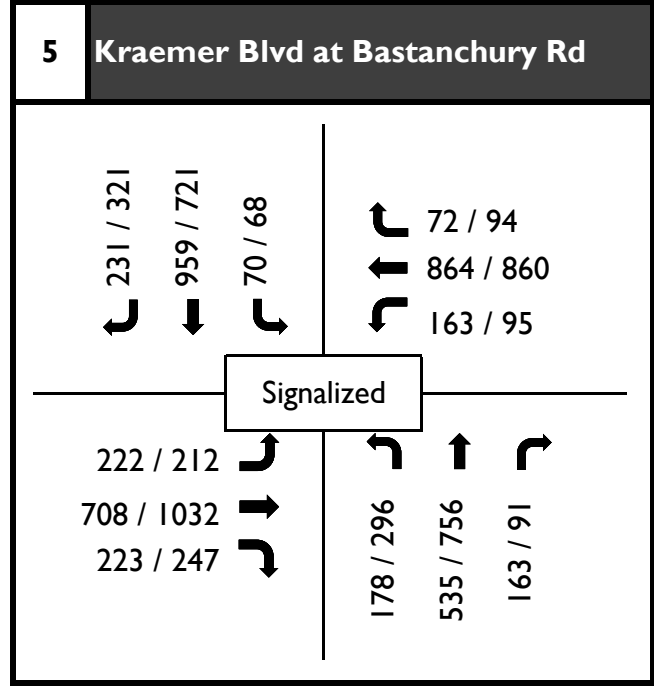
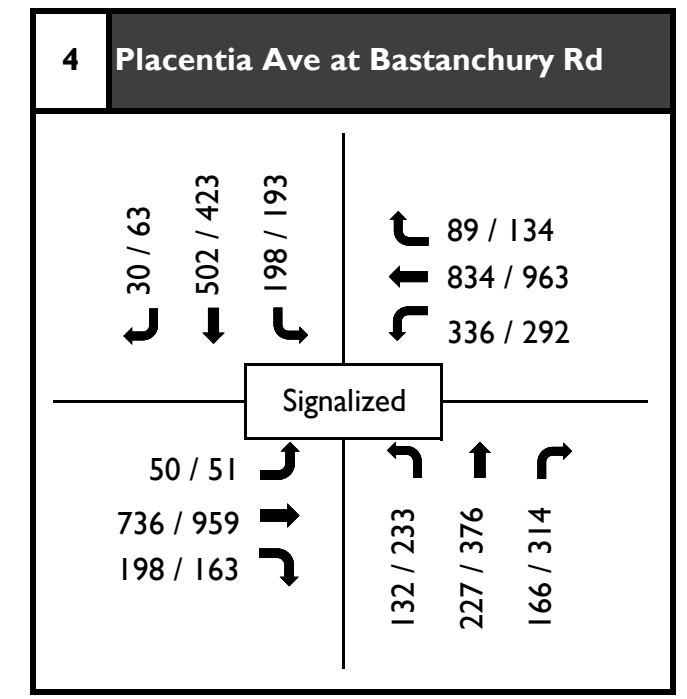
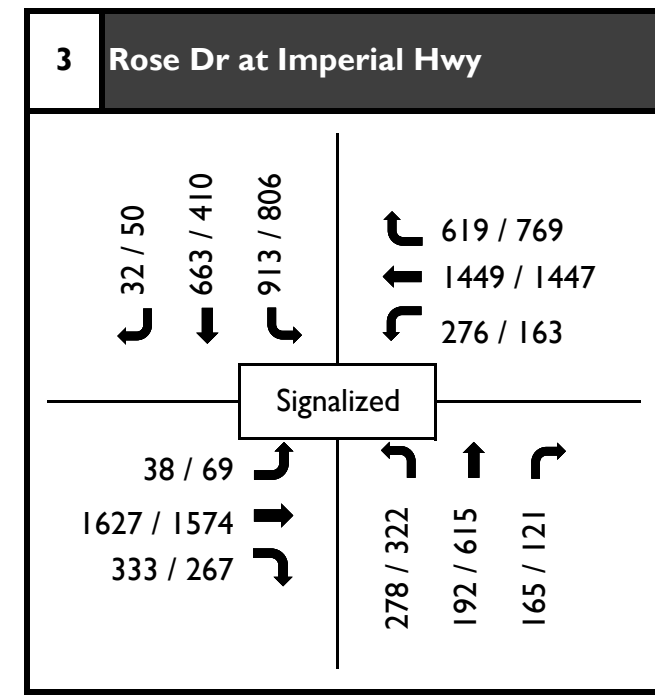
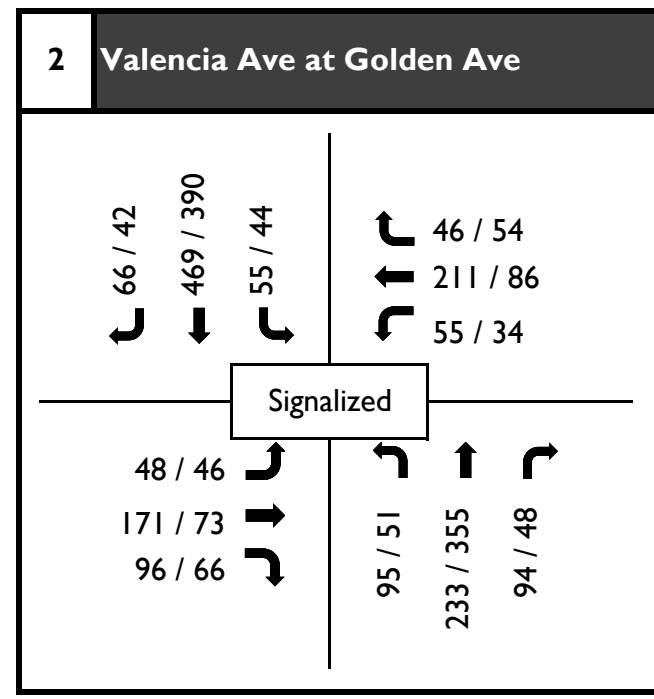
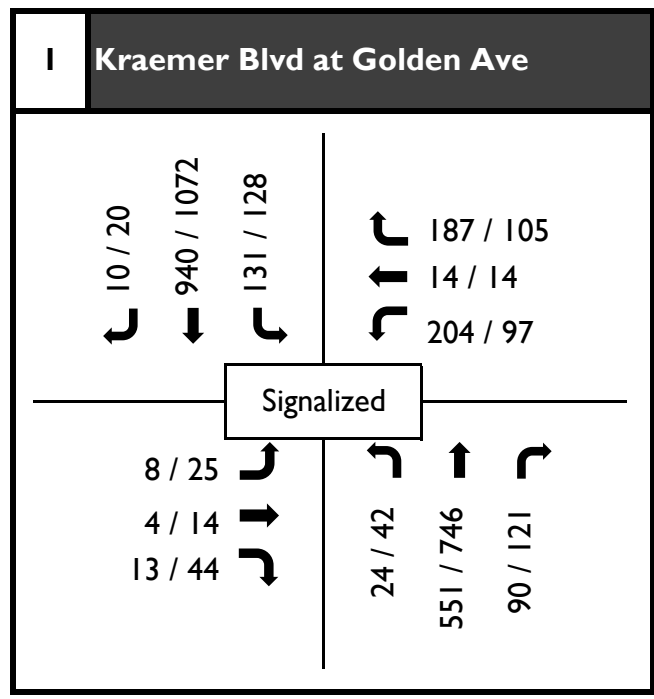
Peak hour intersection level-of-service analyses for the Current General Plan Scenario were conducted for the 42 study intersections based on the methodologies described in Section 2. Figure 5-4 show Current General Plan AM and PM peak hour turning movement traffic volumes. For both the Current General Plan and Proposed General Plan scenarios, a peak hour factor of 0.95 was utilized for all the study intersections.

The Current General Plan intersection Level-of-service analysis results are summarized in Table 5-7 for AM and PM peak hours. As shown in Table 5-7, the majority of the intersections in Placentia are expected to operate at acceptable levels of service under the Current General Plan scenario. Six intersections are expected to operate at unacceptable LOS E or F conditions during the AM or PM peak hour or both:

- Rose Drive at Imperial Highway during the AM and PM peak hours
- Morse Avenue at Kraemer Boulevard during the AM peak hour
- Palm Drive at Rose Drive during the AM peak hour
- Kramer Boulevard at Chapman Avenue during the PM peak hour
- SR-57 NB Ramps at Orangethorpe Avenue during the PM peak hour
- Melrose Street at Orangethorpe Avenue during the PM peak hour

Appendix G contains the intersections operations analysis worksheets for the Current General Plan conditions, with existing geometry.

The intersection of Madison Avenue at Kraemer Boulevard is operating at a LOS value of E during the AM peak hour under the existing conditions. The LOS value of this intersection during the AM peak hour under the Current General Plan scenario is improved to D. This is because the existing peak hour factor was based on the traffic counts, which is 0.75. For the Current and Proposed General Plan scenarios, a peak hour factor of 0.95 was used for all the study intersections. The adjusted traffic volume at this intersection ended up being lower under the Current General Plan scenario than under the existing scenario.



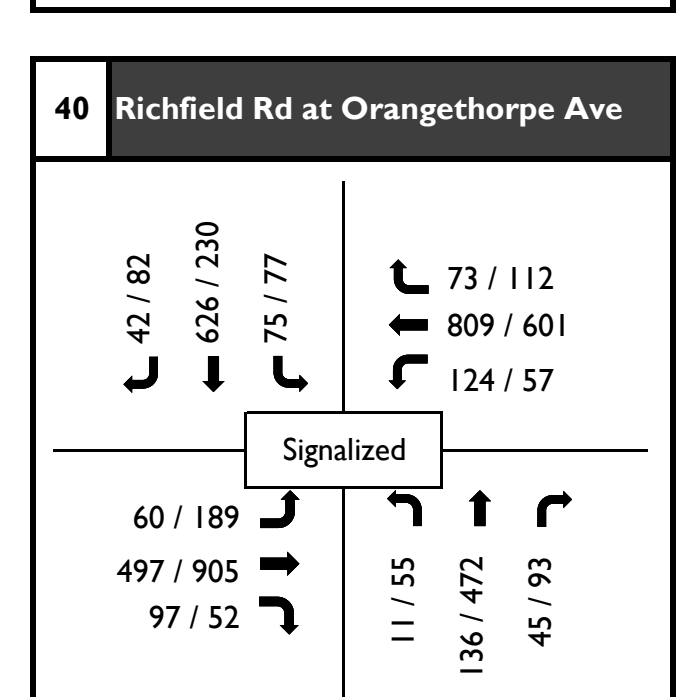
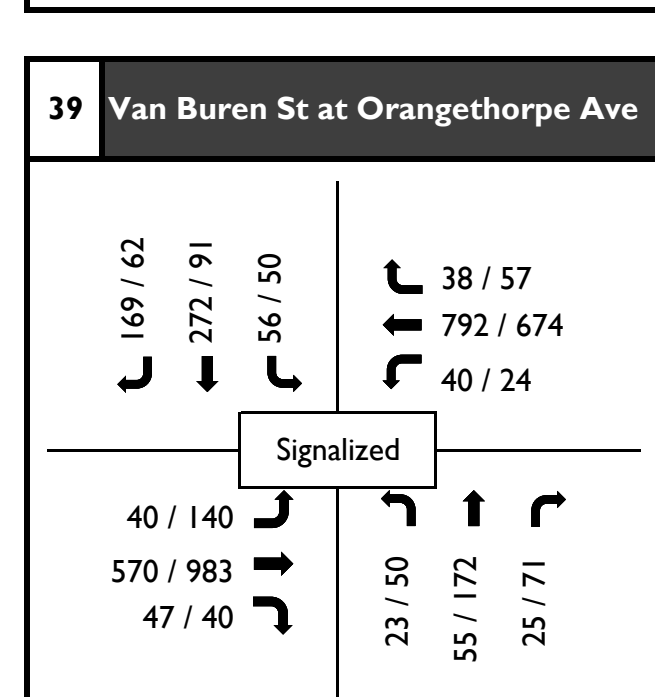
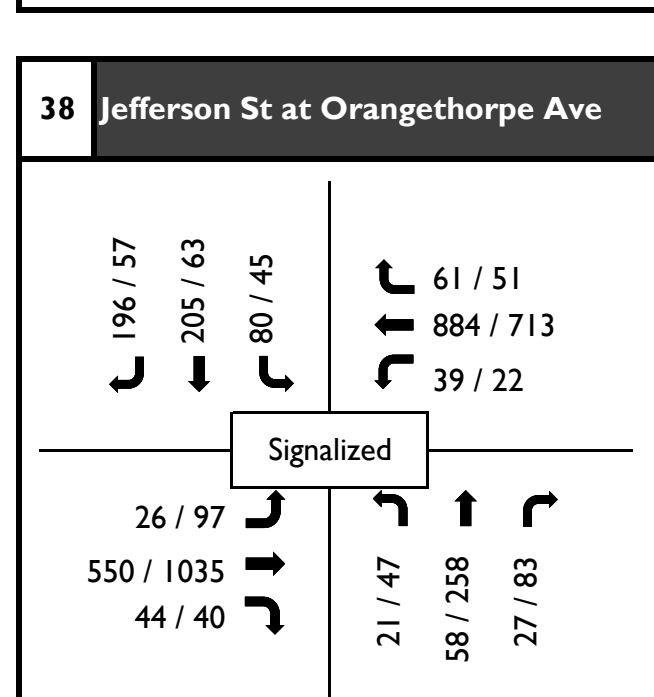
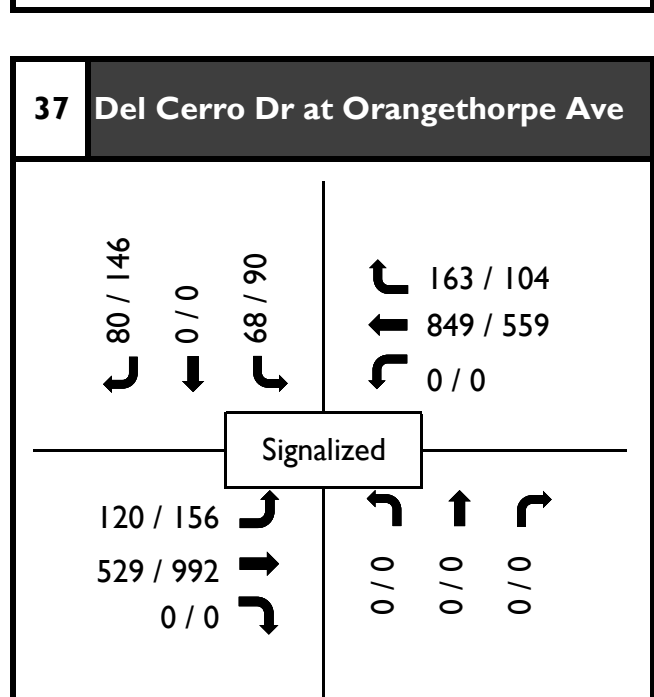
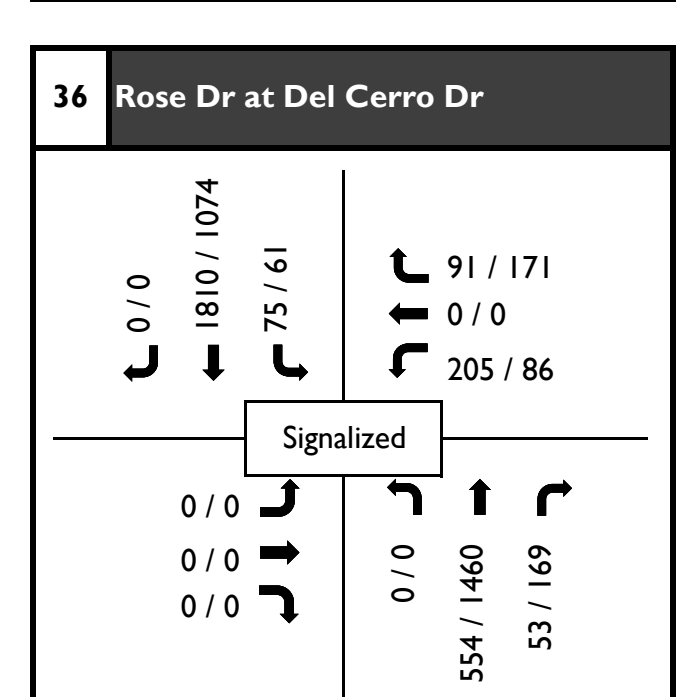
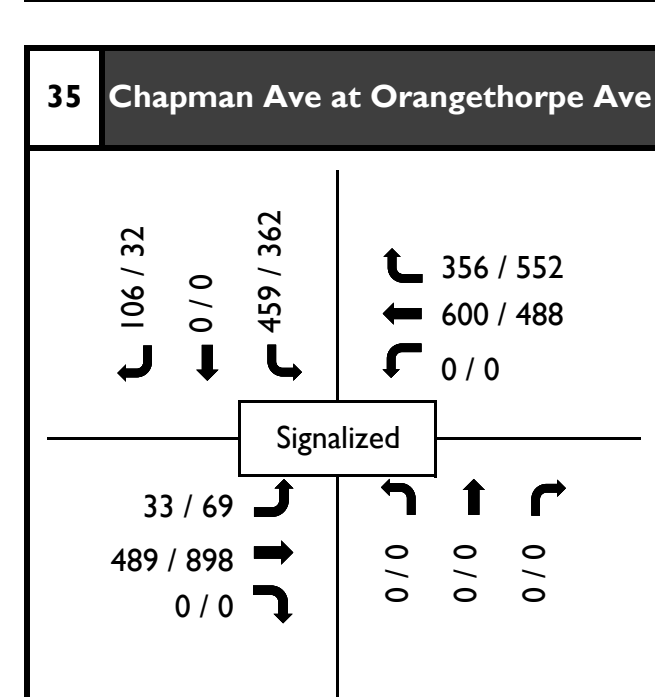
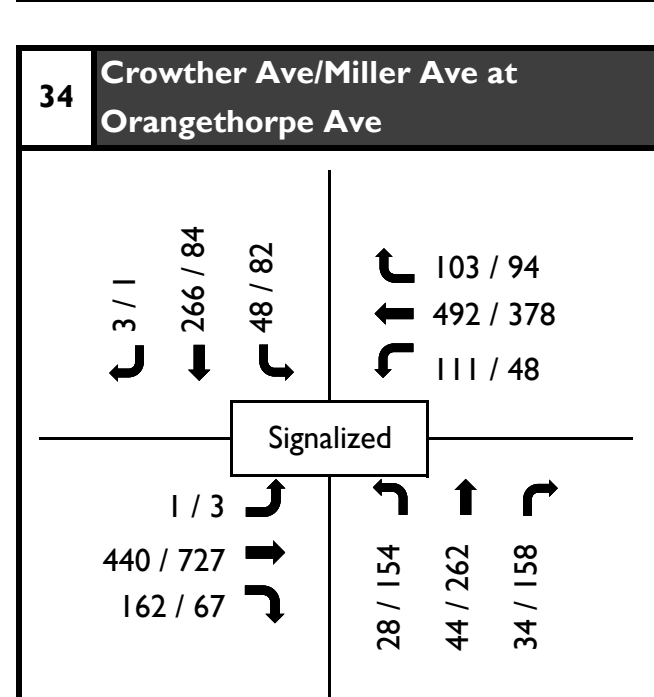
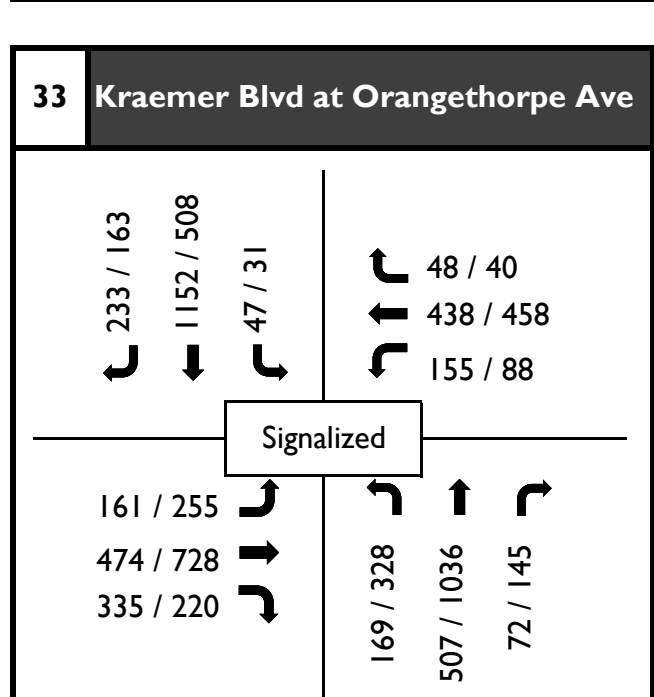
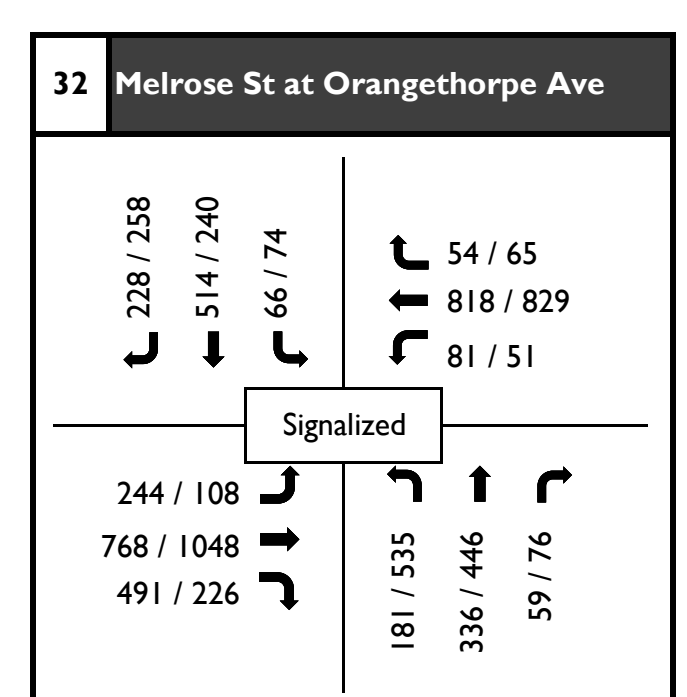
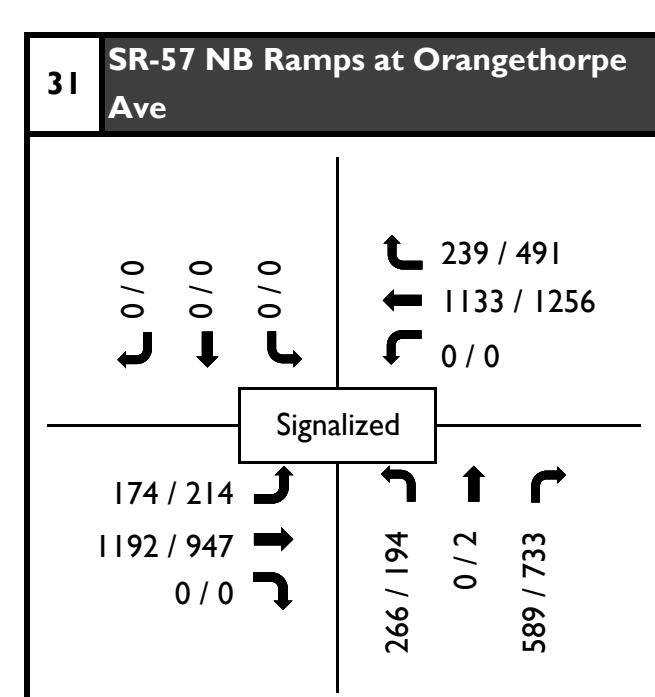
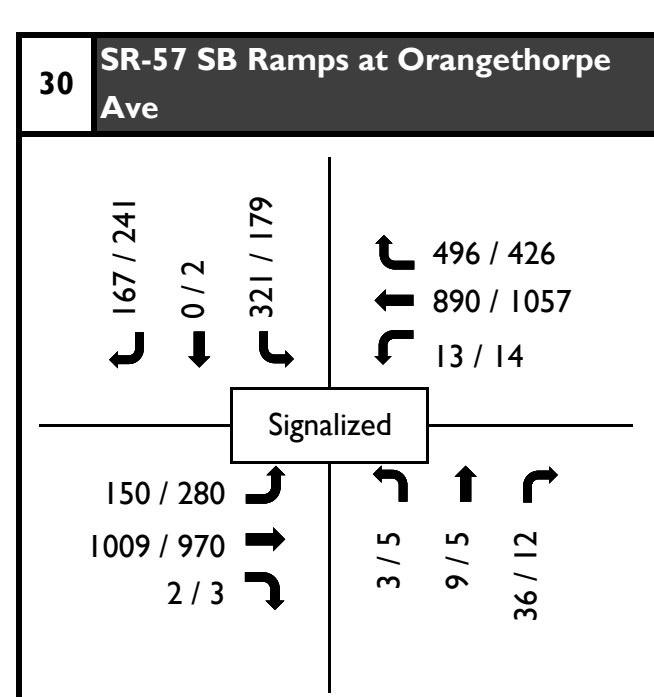
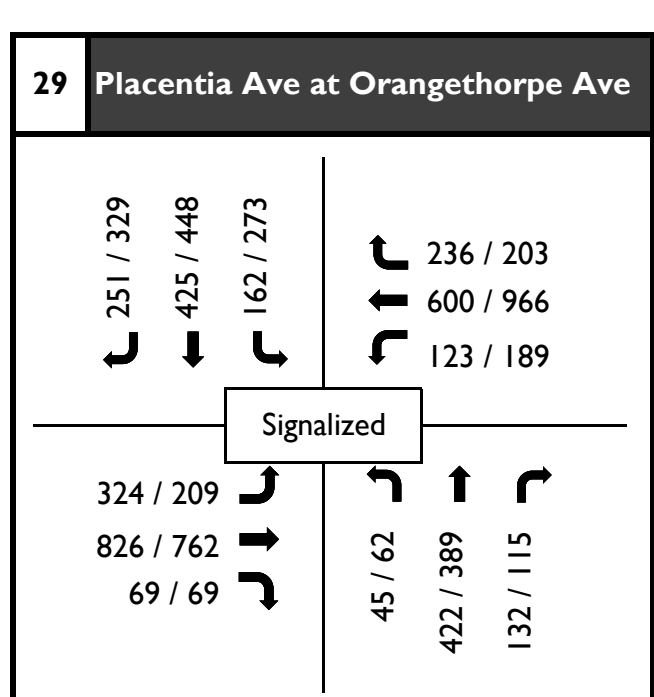
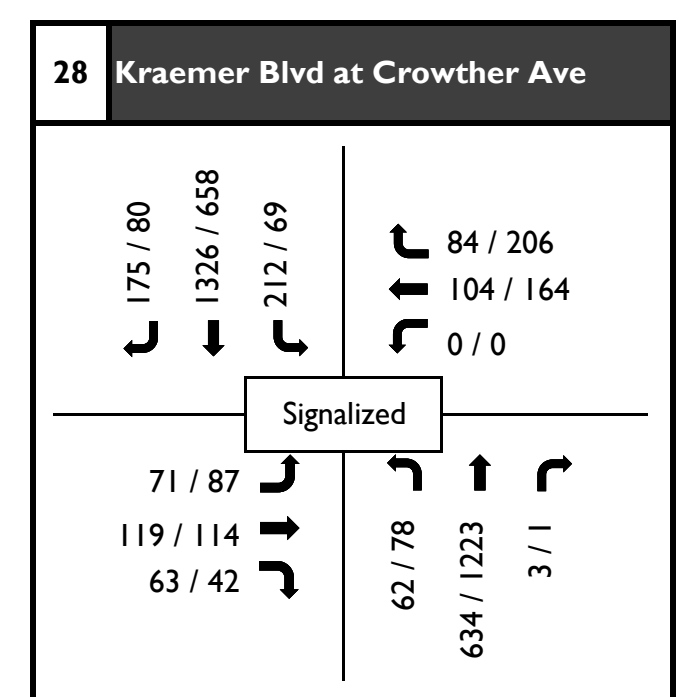
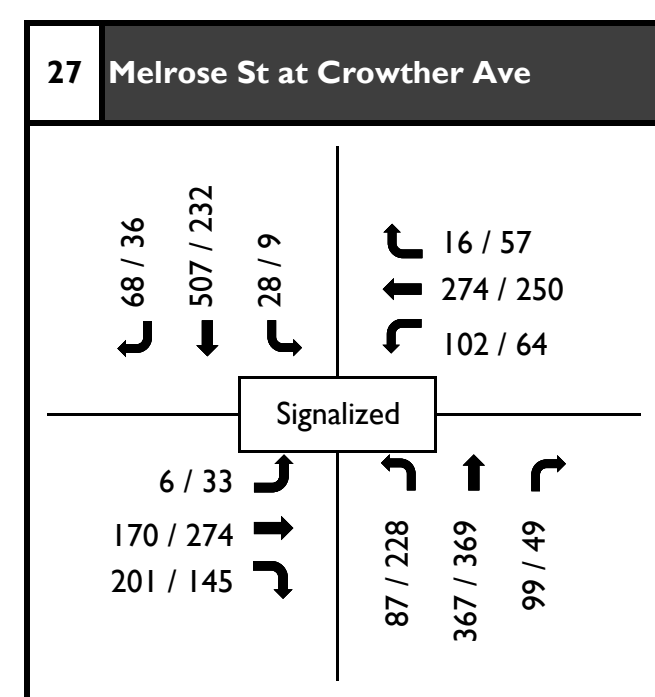
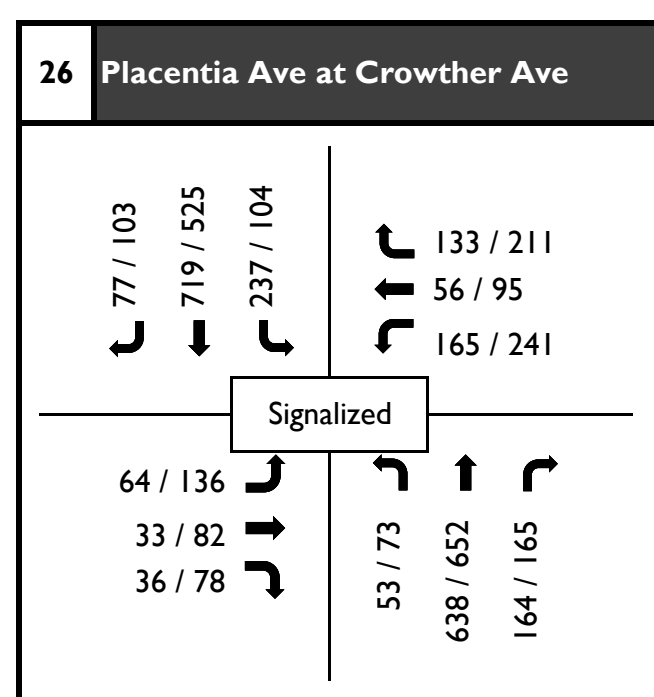
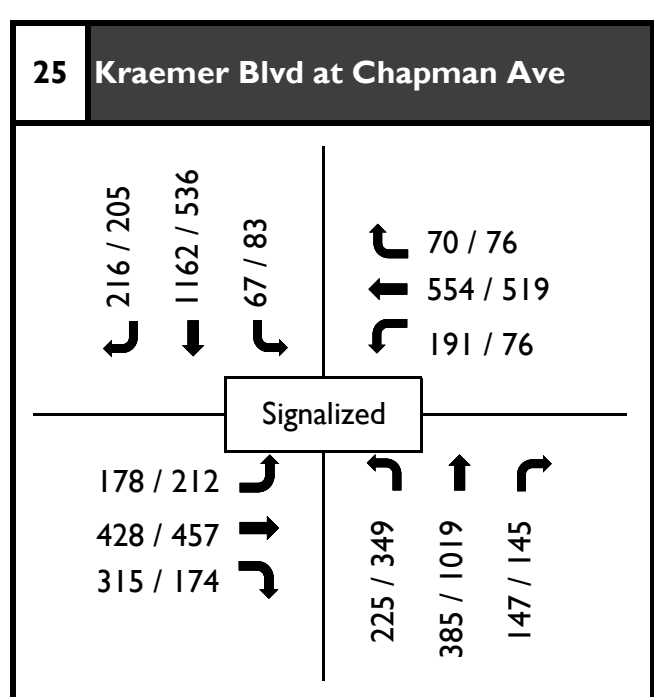
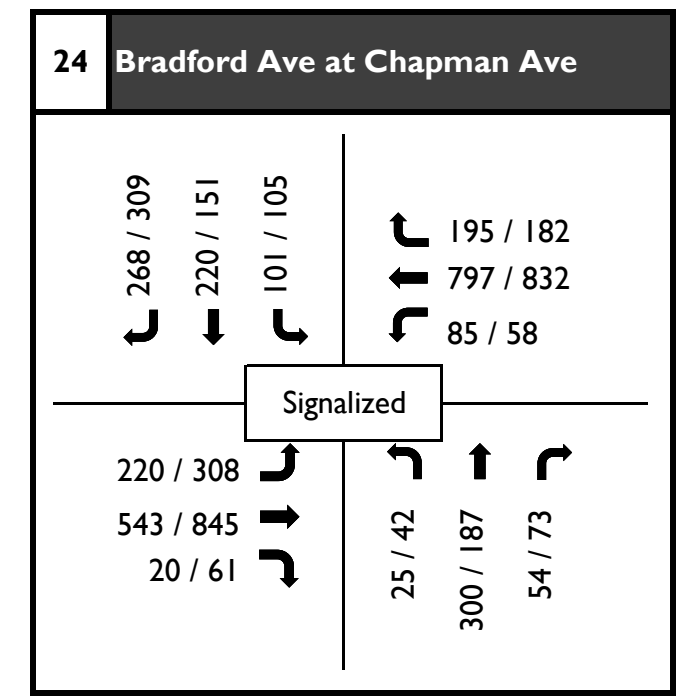
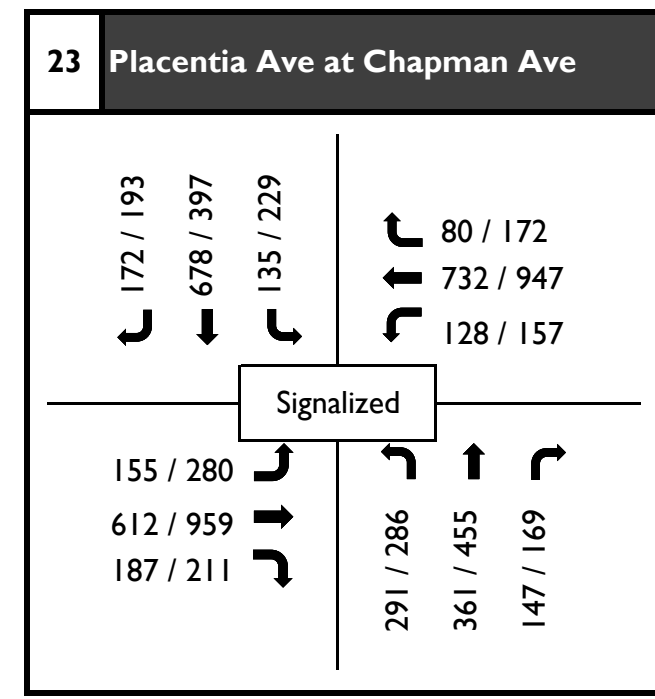
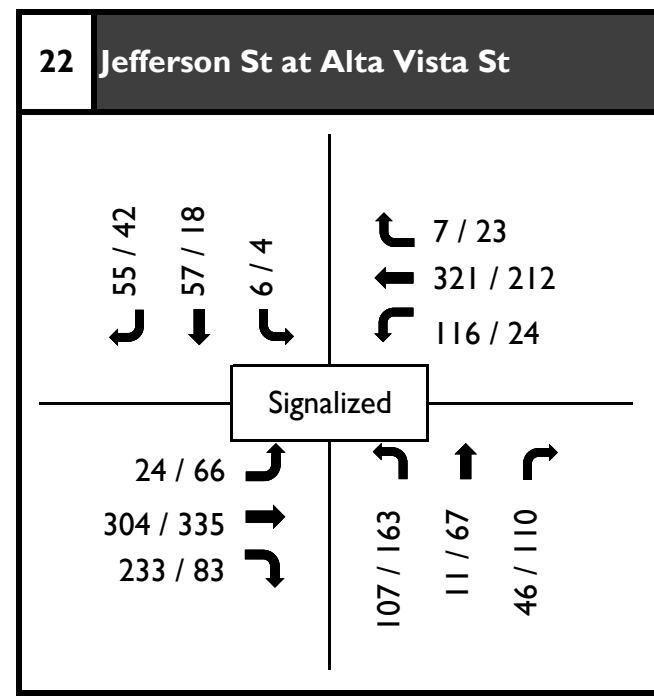
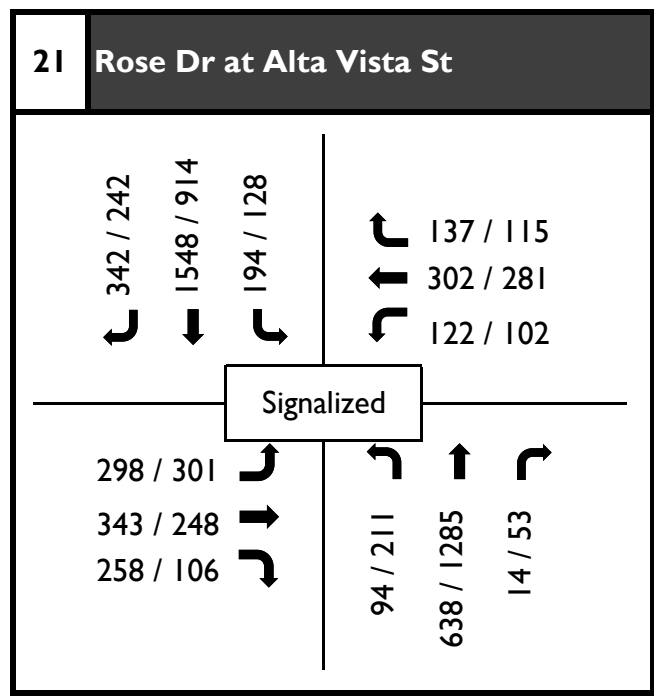
XX / XX AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign





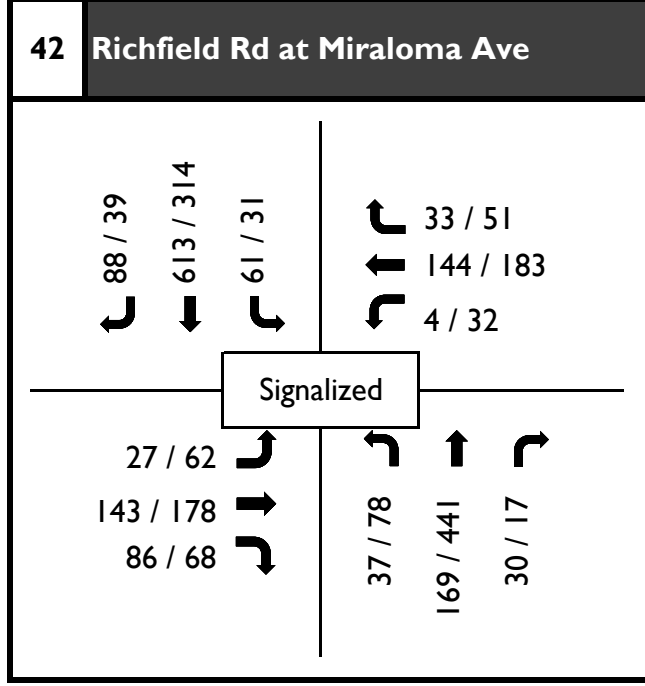
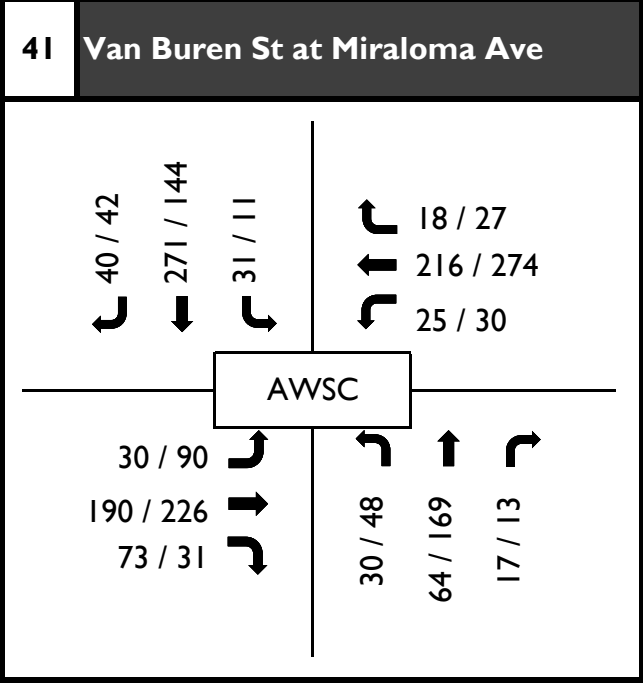
XX / XX AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign





XX / XX AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign



Figure 5-4: C



**TABLE 5-7 – INTERSECTION LEVEL-OF-SERVICE, CURRENT GENERAL PLAN (YEAR 2040) SCENARIO**

ID	Study Intersection	AM Peak Hour			PM Peak Hour		
		ICU	HCM	LOS <sup>1</sup>	ICU	HCM	LOS <sup>1</sup>
1	Kraemer Blvd at Golden Ave	0.490	5.4	A	0.488	4.1	A
2	Valencia Ave at Golden Ave	0.435	5.7	A	0.297	3.9	A
3	Rose Dr at Imperial Hwy*	0.921	64.8	<b>E</b>	0.999	82.9	<b>F</b>
4	Placentia Ave at Bastanchury Rd	0.730	28.5	C	0.861	28.7	D
5	Kraemer Blvd at Bastanchury Rd	0.740	28.1	C	0.812	43.7	D
6	Valencia Ave at Bastanchury Rd	0.683	19.6	B	0.604	15.5	B
7	McCormac at Bastanchury Rd	0.500	3.9	A	0.466	2.7	A
8	Bradford Ave at Yorba Linda Blvd	0.651	15.3	B	0.795	19.9	C
9	Kraemer Blvd at Yorba Linda Blvd	0.691	38.5	D	0.837	41.1	D
10	Palm Dr at Yorba Linda Blvd	0.551	5.3	A	0.551	5.8	A
11	Valencia Ave at Yorba Linda Blvd	0.782	35.2	D	0.680	25.5	C
12	Rose Dr at Yorba Linda Blvd	0.805	35.6	D	0.862	46.7	D
13	Morse Ave at Kraemer Blvd	0.690	125.4	<b>F</b>	0.585	48.4	D
15	Palm Dr at Rose Dr	0.874	55.0	<b>E</b>	0.688	29.1	C
16	Madison Ave at Bradford Ave	0.565	12.5	B	0.530	12.3	B
17	Madison Ave at Kraemer Blvd	0.874	17.9	D	0.621	9.8	B
18	Buena Vista Ave at Rose Dr	0.846	13.8	D	0.757	14.0	C
19	Nutwood Ave at Placentia Ave	0.756	12.4	C	0.648	15.4	B
20	Kraemer Blvd at Alta Vista St	0.787	30.9	C	0.840	34.7	D
21	Rose Dr at Alta Vista St	0.719	29.7	C	0.675	25.9	C
22	Jefferson St at Alta Vista St	0.389	7.9	A	0.321	7.4	A
23	Placentia Ave at Chapman Ave	0.678	25.5	C	0.779	31.4	C
24	Bradford Ave at Chapman Ave	0.675	17.5	B	0.772	19.7	C
25	Kraemer Blvd at Chapman Ave	0.787	44.5	D	0.711	71.8	<b>E</b>
26	Placentia Ave at Crowther Ave	0.590	6.9	A	0.616	9.5	B
27	Melrose St at Crowther Ave	0.470	14.3	B	0.483	19.3	B
28	Kraemer Blvd at Crowther Ave	0.607	15.7	B	0.527	14.1	B
29	Placentia Ave at Orangethorpe Ave	0.634	30.8	C	0.658	29.6	C
30	SR-57 SB Ramps at Orangethorpe Ave*	0.577	14.3	B	0.558	14.6	B
31	SR-57 NB Ramps at Orangethorpe Ave*	0.752	18.7	C	0.931	64.8	<b>E</b>
32	Melrose St at Orangethorpe Ave	0.721	27.8	C	0.820	87.5	<b>F</b>
33	Kraemer Blvd at Orangethorpe Ave	0.815	36.8	D	0.690	53.7	D
34	Crowther Ave/Miller Ave at Orangethorpe Ave	0.435	15.4	B	0.458	38.4	D
35	Chapman Ave at Orangethorpe Ave	0.433	7.7	A	0.547	7.3	A
36	Rose Dr at Del Cerro Dr*	0.674	6.1	B	0.477	5.3	A
37	Del Cerro Dr at Orangethorpe Ave*	0.323	5.4	A	0.297	5.4	A

ID	Study Intersection	AM Peak Hour			PM Peak Hour		
		ICU	HCM	LOS <sup>1</sup>	ICU	HCM	LOS <sup>1</sup>
38	Jefferson St at Orangethorpe Ave	0.480	12.0	B	0.530	13.2	B
39	Van Buren St at Orangethorpe Ave	0.503	12.6	B	0.519	13.1	B
40	Richfield Rd at Orangethorpe Ave	0.551	15.7	B	0.588	23.4	C
42	Richfield Rd at Miraloma Ave	0.361	6.5	B	0.318	7.5	A
	Unsignalized Intersections (HCM)	ICU	HCM	LOS	ICU	HCM	LOS
14	Valencia Ave at Palm Dr	NA	19.0	C	NA	18.2	C
41	Van Buren St at Miraloma Ave	NA	12.8	B	NA	13.5	B

<sup>1</sup> LOS are based on worst case of ICU and HCM

\*OCTA Congestion Management Plan (CMP) locations

## 5.4 PROPOSED GENERAL PLAN TRAFFIC CONDITIONS

### 5.4.1 Proposed General Plan Roadway Level-of-service

Figure 5-5 shows the Proposed General Plan average daily traffic volume forecast for Placentia.

Table 5-8 presents the street segment daily traffic forecast and level-of-service for the 62 analyzed roadway segments, based on the 2017 OCTA MPAH classification. Table 5-8 also presents the number of lanes and LOS E capacity of each roadway segment. Level-of-service is based on the thresholds presented in Table 2-2.

All of the roadway segments are expected to operate at acceptable conditions under the Proposed General Plan Scenario with the 2017 OCTA MPAH classification capacity.



**CITY of PLACENTIA  
General Plan Update**

**Proposed General Plan (Year 2040)  
Daily Traffic Volumes**

**Legend**

- Placentia City Limits
- ++++ Railroad
- x,xxx Average Daily Traffic

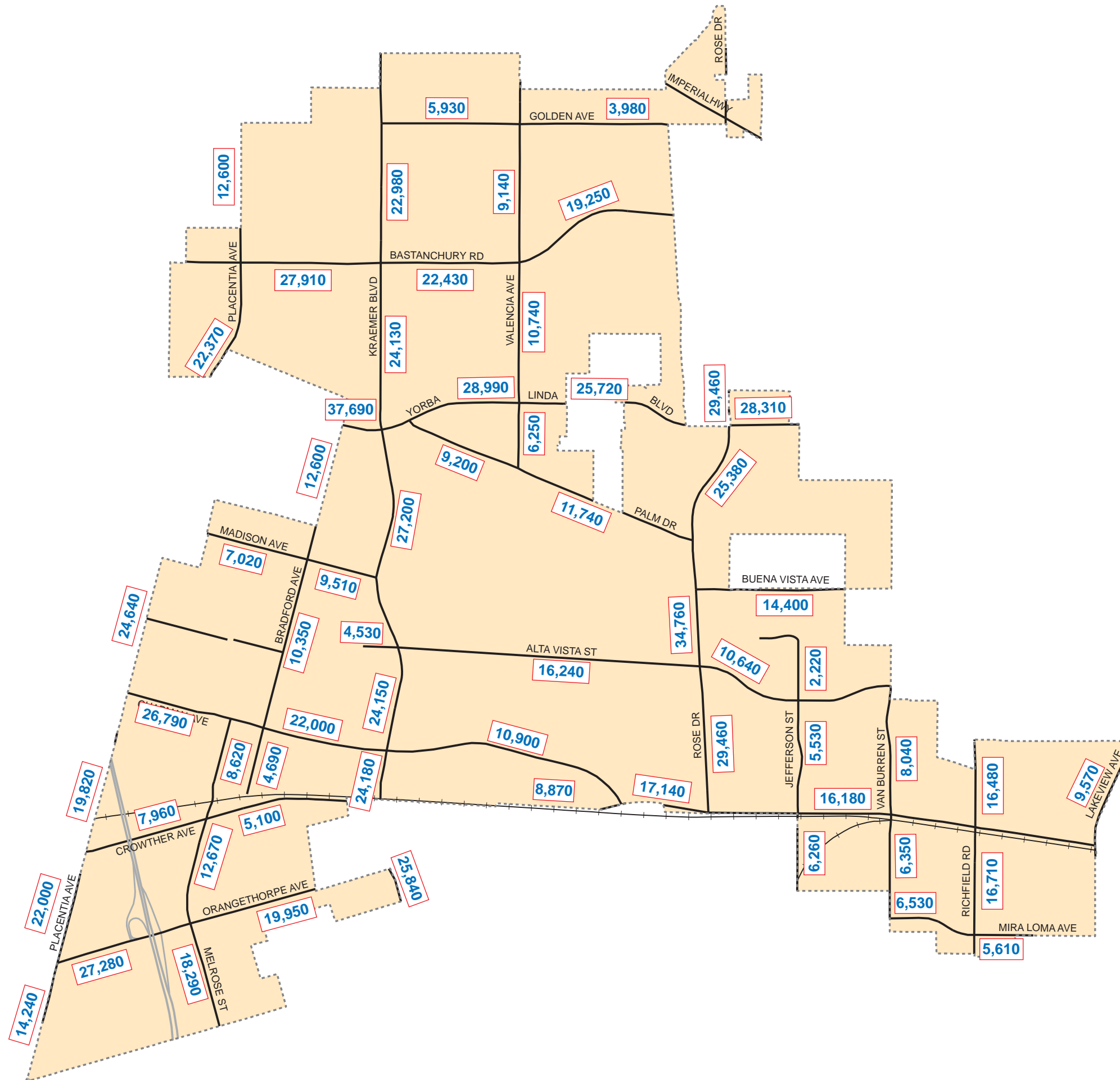


Figure 5-5

**TABLE 5-8 – ROADWAY LEVEL-OF-SERVICE, PROPOSED GENREAL PLAN (YEARY 2040), 2017 OCTA MPAH CLASSIFICATION**

ID	Roadway Segment	MPAH Definition		LOS E Capacity	Proposed General Plan		
		Classification	Lanes		ADT	V/C	LOS
<b>Golden Avenue</b>							
1	Valencia Avenue to East City Limit	Divided Collector	2D	18,750	3,980	0.212	A
2	Kramer Boulevard to Valencia Avenue	Divided Collector	2D	18,750	5,930	0.316	A
<b>Bastanchury Road</b>							
3	West City Limits to Kraemer Boulevard	Primary	6D	56,300	27,910	0.496	A
4	Kraemer Boulevard to Valencia Avenue	Primary	6D	56,300	22,430	0.398	A
5	Valencia Avenue to East City Limit	Modified Primary	4D	37,500	19,250	0.513	A
<b>Yorba Linda Boulevard</b>							
6	Bradford Avenue to Kramer Boulevard	Modified Major	6D	56,300	37,690	0.669	B
7	Kramer Boulevard to Valencia Avenue	Modified Major	6D	56,300	28,990	0.515	A
8	Valencia Avenue to Rose Drive	Modified Major	6D	56,300	25,720	0.457	A
9	Rose Drive to Eastern City Limit	Modified Major	6D	56,300	28,310	0.503	A
<b>Palm Drive</b>							
10	Yorba Linda Boulevard to Valencia Avenue	Modified Primary	4U	25,000	9,200	0.368	A
11	Valencia Avenue to Rose Drive	Modified Primary	4U	25,000	11,740	0.470	A
<b>Madison Avenue</b>							
12	West City Limits to Bradford Avenue	Secondary	4U	25,000	7,020	0.281	A
13	Bradford Avenue to Kraemer Boulevard	Secondary	4U	25,000	9,510	0.380	A
<b>Buena Vista Avenue</b>							
14	Rose Drive to East City Limit	Primary	4U	25,000	14,400	0.576	A
<b>Alta Vista Street</b>							
15	Angelina Drive to Kramer Boulevard	Modified Primary	4U	25,000	4,530	0.181	A
16	Kramer Boulevard to Rose Drive	Modified Primary	4U	25,000	16,240	0.650	B
17	Rose Drive to Van Buren Street	Modified Primary	4U	25,000	10,640	0.426	A
<b>Chapman Avenue</b>							
18	Placentia Avenue to Bradford Avenue	Modified Primary	4D	37,500	26,790	0.714	C
19	Bradford Avenue to Kraemer Boulevard	Modified Primary	4D	37,500	22,000	0.587	A
20	Kraemer Boulevard to Orangethorpe Avenue	Primary	4D	37,500	10,900	0.291	A
<b>Crowther Avenue</b>							
21	Placentia Avenue to Melrose Street	Divided Collector	2D	18,750	7,960	0.425	A
22	Melrose Street to East City Limit	Divided Collector	2D	18,750	5,100	0.272	A
<b>Orangethorpe Avenue</b>							

ID	Roadway Segment	MPAH Definition		LOS E Capacity	Proposed General Plan		
		Classification	Lanes		ADT	V/C	LOS
23	Placentia Avenue to Melrose Street	Primary	6D	56,300	27,280	0.485	A
24	Melrose Street to Kraemer Boulevard	Primary	6D	56,300	19,950	0.354	A
25	City Limit w/o Chapman Ave. to Chapman Ave.	Primary	6D	56,300	8,870	0.158	A
26	Chapman Avenue to Rose Drive	Primary	6D	56,300	17,140	0.304	A
27	Rose Drive to East City Limit	Primary	6D	56,300	16,180	0.287	A
<b>Miraloma Avenue 1</b>							
28	Van Buren Street to Richfield Road	Modified Secondary	4U	25,000	6,530	0.261	A
29	Richfield Road to Lakeview Avenue	Modified Secondary	4U	25,000	5,610	0.224	A
<b>Placentia Avenue</b>							
30	South City Limit to Orangethorpe Avenue	Secondary	4U	25,000	14,240	0.570	A
31	Orangethorpe Avenue to Crowther Avenue	Secondary	4D	37,500	22,000	0.587	A
32	Crowther Avenue to Chapman Avenue	Secondary	4D	37,500	19,820	0.529	A
33	Chapman Avenue to n/o Primrose Avenue	Secondary	4D	37,500	24,640	0.657	B
34	Macadamia Lane to Bastanchury Road	Secondary	4D	37,500	22,370	0.597	A
35	Bastanchury Road to Rolling Hills Drive	Secondary	4D	37,500	12,600	0.336	A
<b>Melrose Street</b>							
36	South City Limit to Orangethorpe Avenue	Secondary	4U	25,000	18,290	0.732	C
37	Orangethorpe Avenue to Crowther Avenue	Secondary	4U	25,000	12,670	0.507	A
38	Crowther Avenue to Santa Fe Avenue	Secondary	4U	25,000	8,620	0.345	A
<b>Bradford Avenue</b>							
39	Santa Fe Avenue to Chapman Avenue	Secondary	4U	25,000	4,690	0.188	A
40	Chapman Avenue to Madison Avenue	Secondary	4U	25,000	10,350	0.414	A
41	Madison Avenue to North City Limit	Secondary	4U	25,000	12,600	0.504	A
<b>Kraemer Boulevard</b>							
42	South City Limits to Orangethorpe Avenue	Modified Primary	6D	56,300	25,840	0.459	A
43	Crowther Avenue to Chapman Avenue	Primary	6D	56,300	24,180	0.429	A
44	Chapman Avenue to Madison Avenue	Primary	6D	56,300	24,150	0.429	A
45	Madison Avenue to Yorba Linda Boulevard	Primary	6D	56,300	27,200	0.483	A
46	Yorba Linda Boulevard to Bastanchury Road	Primary	6D	56,300	24,130	0.429	A

ID	Roadway Segment	MPAH Definition		LOS E Capacity	Proposed General Plan		
		Classification	Lanes		ADT	V/C	LOS
47	Bastanchury Road to North City Limit	Primary	6D	56,300	22,980	0.408	A
<b>Valencia Avenue</b>							
48	Palm Drive to Yorba Linda Boulevard	Secondary	4U	25,000	6,250	0.250	A
49	Yorba Linda Boulevard to Bastanchury Road	Secondary	4U	25,000	10,740	0.430	A
50	Bastanchury Road to Northern City Limit	Secondary	4U	25,000	9,140	0.366	A
<b>Rose Drive</b>							
51	Orangethorpe Avenue to Alta Vista Street	Modified Major	6D	56,300	29,460	0.523	A
52	Alta Vista Street to Palm Drive	Modified Major	6D	56,300	34,760	0.617	B
53	Palm Drive to Yorba Linda Boulevard	Modified Major	6D	56,300	25,380	0.451	A
54	City Limit s/o Golden Avenue to North City Limit	Modified Major	6D	56,300	29,680	0.527	A
<b>Jefferson Street</b>							
55	South City Limits to Orangethorpe Avenue	Secondary	4U	25,000	6,260	0.250	A
56	Orangethorpe Avenue to Alta Vista Street	Secondary	4U	25,000	5,530	0.221	A
57	Alta Vista Street to Garten Drive	Secondary	4U	25,000	2,220	0.089	A
<b>Van Buren Street 2</b>							
58	South City Limits to Orangethorpe Avenue	Collector	2U	12,500	6,350	0.508	A
59	Orangethorpe Avenue to North City Limit	Collector	2U	12,500	8,040	0.643	B
<b>Richfield Road</b>							
60	South City Limits to Orangethorpe Avenue	Secondary	4U	25,000	16,710	0.668	B
61	Orangethorpe Avenue to North City Limit	Secondary	4U	25,000	16,480	0.659	B
<b>Lakeview Avenue</b>							
62	South City Limit to North City Limit	Primary	4D	37,500	9,570	0.255	A

Abbreviations: 2U: 2 Lane Undivided. 2D: 2 Lane Divided. 3D: 3 Lane Divided. 4U: 4 Lane Undivided. 4D: 4 Lane Divided. 5D: 5 Lane Divided. 6D: 6 Lane Div. ADT: Average Daily Traffic Volume. V/C: Volume to Capacity Ratio. LOS: level-of-service

Table 5-6 presents the street segment daily traffic forecast and Level-of-service for the 62 analyzed roadway segments, based on the existing configuration and capacity. Table 5-6 also presents the number of lanes and LOS E capacity of each roadway segment. Level-of-service is based on the thresholds presented previously in Table 2-2.

The majority of the roadway segments are expected to operate at acceptable conditions under the Proposed General Plan Scenario. The following segments are expected to operate below acceptable levels, and the proposed improvements and recommendations for this roadway segment are discussed in Section 6:

- Chapman Avenue between Placentia Avenue and Bradford Avenue
- Placentia Avenue between Chapman Avenue and Primrose Avenue
- Kraemer Boulevard between South City Limit and Orangethorpe Avenue
- Rose Drive between Alta Vista Street and Palm Drive
- Rose Drive between City Limit south of Golden Avenue to North City Limit

**TABLE 5-9 – ROADWAY LEVEL-OF-SERVICE, PROPOSED GENREAL PLAN (YEAR 2040), EXISTING CONFIGURATION**

ID	Roadway Segment	Existing Configuration		LOS E Capacity	Proposed General Plan		
		Classification	Lanes		ADT	V/C	LOS
<b>Golden Avenue</b>							
1	Valencia Avenue to East City Limit	Divided Collector	2U	12,500	3,980	0.318	A
2	Kramer Boulevard to Valencia Avenue	Divided Collector	2U	12,500	5,930	0.474	A
<b>Bastanchury Road</b>							
3	West City Limits to Kraemer Boulevard	Primary	4D	37,500	27,910	0.744	C
4	Kraemer Boulevard to Valencia Avenue	Primary	4D	37,500	22,430	0.598	A
5	Valencia Avenue to East City Limit	Modified Primary	4D	37,500	19,250	0.513	A
<b>Yorba Linda Boulevard</b>							
6	Bradford Avenue to Kramer Boulevard	Modified Major	6D	56,300	37,690	0.669	B
7	Kramer Boulevard to Valencia Avenue	Modified Major	4D	37,500	28,990	0.773	C
8	Valencia Avenue to Rose Drive	Modified Major	4D	37,500	25,720	0.686	B
9	Rose Drive to Eastern City Limit	Modified Major	4D	37,500	28,310	0.755	C
<b>Palm Drive</b>							
10	Yorba Linda Boulevard to Valencia Avenue	Modified Primary	2U	12,500	9,200	0.736	C
11	Valencia Avenue to Rose Drive	Modified Primary	4D	37,500	11,740	0.313	A
<b>Madison Avenue</b>							
12	West City Limits to Bradford Avenue	Secondary	2U	12,500	7,020	0.562	A
13	Bradford Avenue to Kraemer Boulevard	Secondary	2U	12,500	9,510	0.761	C
<b>Buena Vista Avenue</b>							
14	Rose Drive to East City Limit	Primary	4D	37,500	14,400	0.384	A
<b>Alta Vista Street</b>							
15	Angelina Drive to Kramer Boulevard	Modified Primary	2D	18,750	4,530	0.242	A
16	Kramer Boulevard to Rose Drive	Modified Primary	4U	25,000	16,240	0.650	B
17	Rose Drive to Van Buren Street	Modified Primary	4U	25,000	10,640	0.426	A
<b>Chapman Avenue</b>							
18	Placentia Avenue to Bradford Avenue	Modified Primary	4U	25,000	26,790	1.072	F
19	Bradford Avenue to Kraemer Boulevard	Modified Primary	4U	25,000	22,000	0.880	D
20	Kraemer Boulevard to Orangethorpe Avenue	Primary	4D	37,500	10,900	0.291	A
<b>Crowther Avenue</b>							
21	Placentia Avenue to Melrose Street	Divided Collector	2U	12,500	7,960	0.637	B
22	Melrose Street to East City Limit	Divided Collector	2U	12,500	5,100	0.408	A
<b>Orangethorpe Avenue</b>							



ID	Roadway Segment	Existing Configuration		LOS E Capacity	Proposed General Plan		
		Classification	Lanes		ADT	V/C	LOS
23	Placentia Avenue to Melrose Street	Primary	6D	56,300	27,280	0.485	A
24	Melrose Street to Kraemer Boulevard	Primary	4U	25,000	19,950	0.798	C
25	City Limit w/o Chapman Ave. to Chapman Ave.	Primary	6D	56,300	8,870	0.158	A
26	Chapman Avenue to Rose Drive	Primary	6D	56,300	17,140	0.304	A
27	Rose Drive to East City Limit	Primary	4U	25,000	16,180	0.647	B
<b>Miraloma Avenue 1</b>							
28	Van Buren Street to Richfield Road	Modified Secondary	4U	25,000	6,530	0.261	A
29	Richfield Road to Lakeview Avenue	Modified Secondary	4U	25,000	5,610	0.224	A
<b>Placentia Avenue</b>							
30	South City Limit to Orangethrope Avenue	Secondary	4U	25,000	14,240	0.570	A
31	Orangethrope Avenue to Crowther Avenue	Secondary	4D	37,500	22,000	0.587	A
32	Crowther Avenue to Chapman Avenue	Secondary	4D	37,500	19,820	0.529	A
33	Chapman Avenue to n/o Primrose Avenue	Secondary	4U	25,000	24,640	0.986	<b>E</b>
34	Macadamia Lane to Bastanchury Road	Secondary	4D	37,500	22,370	0.597	A
35	Bastanchury Road to Rolling Hills Drive	Secondary	4D	37,500	12,600	0.336	A
<b>Melrose Street</b>							
36	South City Limit to Orangethorpe Avenue	Secondary	4U	25,000	18,290	0.732	C
37	Orangethorpe Avenue to Crowther Avenue	Secondary	4U	25,000	12,670	0.507	A
38	Crowther Avenue to Santa Fe Avenue	Secondary	3D	28,125	8,620	0.306	A
<b>Bradford Avenue</b>							
39	Santa Fe Avenue to Chapman Avenue	Secondary	2U	12,500	4,690	0.375	A
40	Chapman Avenue to Madison Avenue	Secondary	2U	12,500	10,350	0.828	D
41	Madison Avenue to North City Limit	Secondary	4U	25,000	12,600	0.504	A
<b>Kraemer Boulevard</b>							
42	South City Limits to Orangethorpe Avenue	Modified Primary	4U	25,000	25,840	1.034	<b>F</b>
43	Crowther Avenue to Chapman Avenue	Primary	6D	56,300	24,180	0.429	A
44	Chapman Avenue to Madison Avenue	Primary	4D	37,500	24,150	0.644	B
45	Madison Avenue to Yorba Linda Boulevard	Primary	4D	37,500	27,200	0.725	C
46	Yorba Linda Boulevard to Bastanchury Road	Primary	4D	37,500	24,130	0.643	B
47	Bastanchury Road to North City Limit	Primary	4D	37,500	22,980	0.613	B
<b>Valencia Avenue</b>							

ID	Roadway Segment	Existing Configuration		LOS E Capacity	Proposed General Plan		
		Classification	Lanes		ADT	V/C	LOS
48	Palm Drive to Yorba Linda Boulevard	Secondary	4U	25,000	6,250	0.250	A
49	Yorba Linda Boulevard to Bastanchury Road	Secondary	4U	25,000	10,740	0.430	A
50	Bastanchury Road to Northern City Limit	Secondary	4U	25,000	9,140	0.366	A
<b>Rose Drive</b>							
51	Orangethorpe Avenue to Alta Vista Street	Modified Major	4D	37,500	29,460	0.786	C
52	Alta Vista Street to Palm Drive	Modified Major	4D	37,500	34,760	0.927	E
53	Palm Drive to Yorba Linda Boulevard	Modified Major	4D	37,500	25,380	0.677	B
54	City Limit s/o Golden Avenue to North City Limit	Modified Major	4U	25,000	29,680	1.187	F
<b>Jefferson Street</b>							
55	South City Limits to Orangethorpe Avenue	Secondary	2U	12,500	6,260	0.501	A
56	Orangethorpe Avenue to Alta Vista Street	Secondary	4U	25,000	5,530	0.221	A
57	Alta Vista Street to Garten Drive	Secondary	2U	12,500	2,220	0.178	A
<b>Van Buren Street 2</b>							
58	South City Limits to Orangethorpe Avenue	Collector	2U	12,500	6,350	0.508	A
59	Orangethorpe Avenue to North City Limit	Collector	2U	12,500	8,040	0.643	B
<b>Richfield Road</b>							
60	South City Limits to Orangethorpe Avenue	Secondary	4U	25,000	16,710	0.668	B
61	Orangethorpe Avenue to North City Limit	Secondary	4U	25,000	16,480	0.659	B
<b>Lakeview Avenue</b>							
62	South City Limit to North City Limit	Primary	4D	37,500	9,570	0.255	A

Abbreviations: 2U: 2 Lane Undivided. 2D: 2 Lane Divided. 3D: 3 Lane Divided. 4U: 4 Lane Undivided. 4D: 4 Lane Divided. 5D: 5 Lane Divided. 6D: 6 Lane Div. ADT: Average Daily Traffic Volume. V/C: Volume to Capacity Ratio. LOS: level-of-service

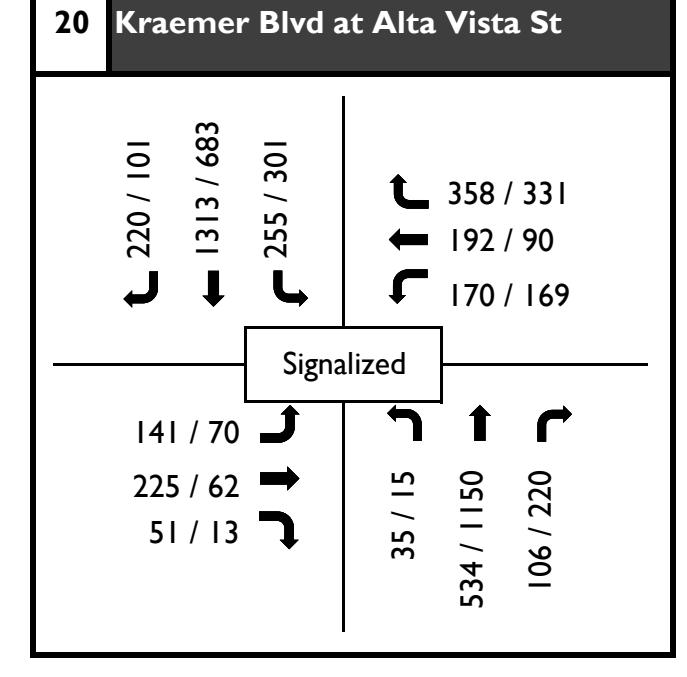
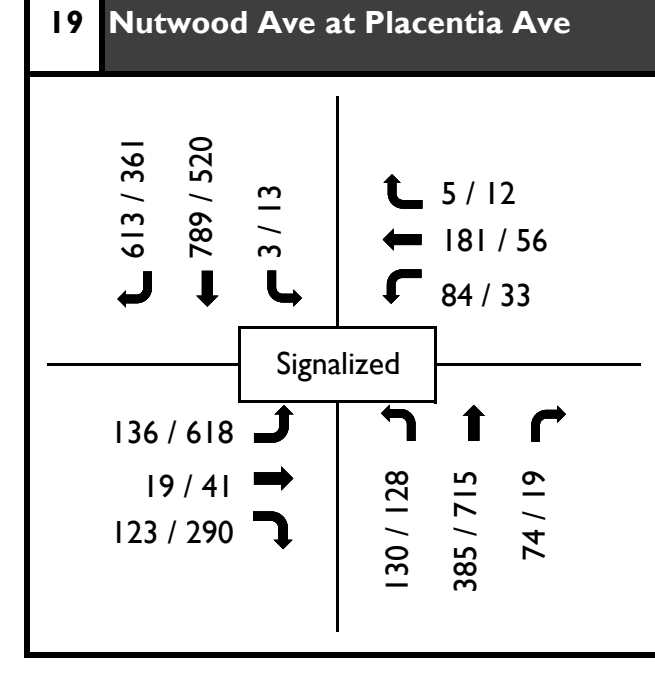
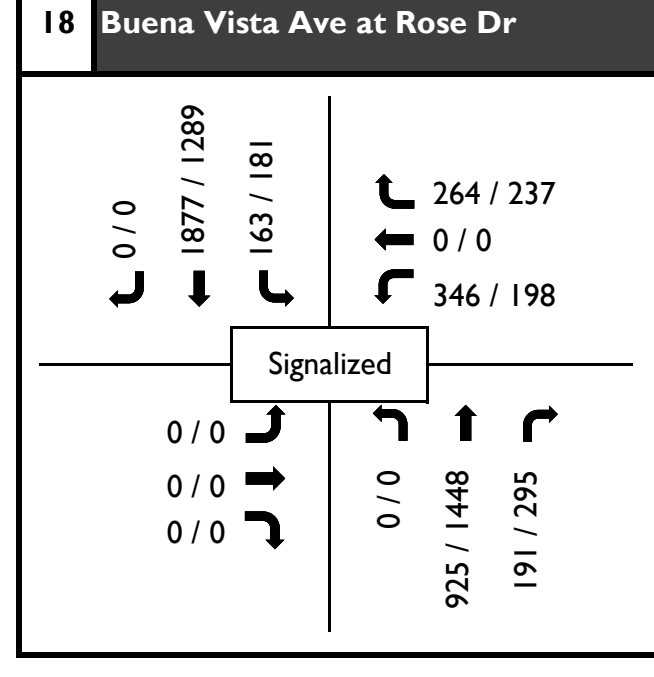
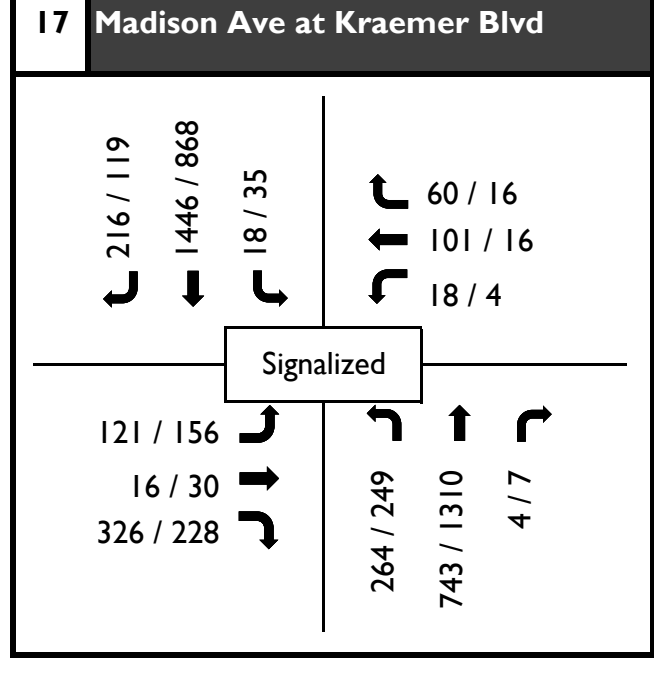
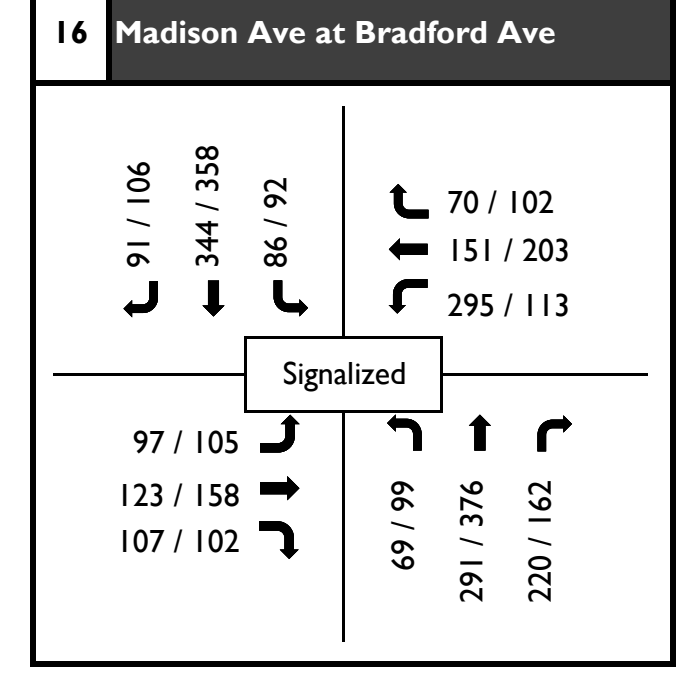
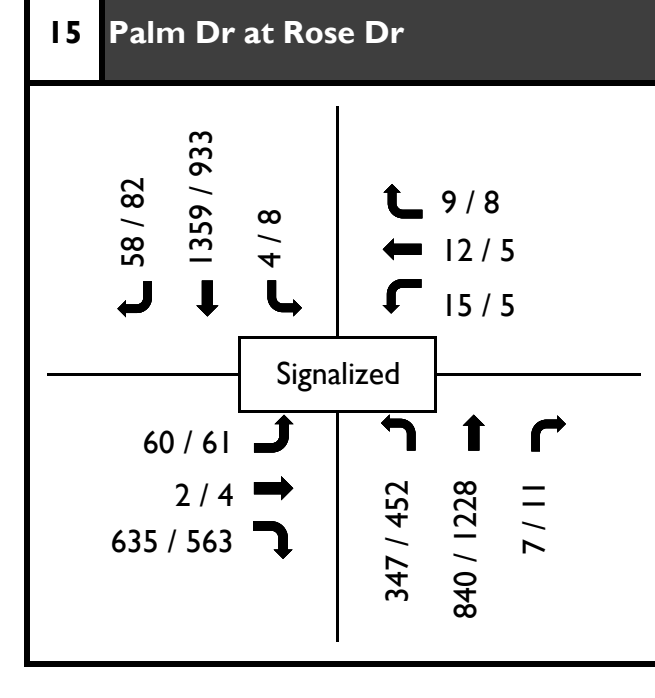
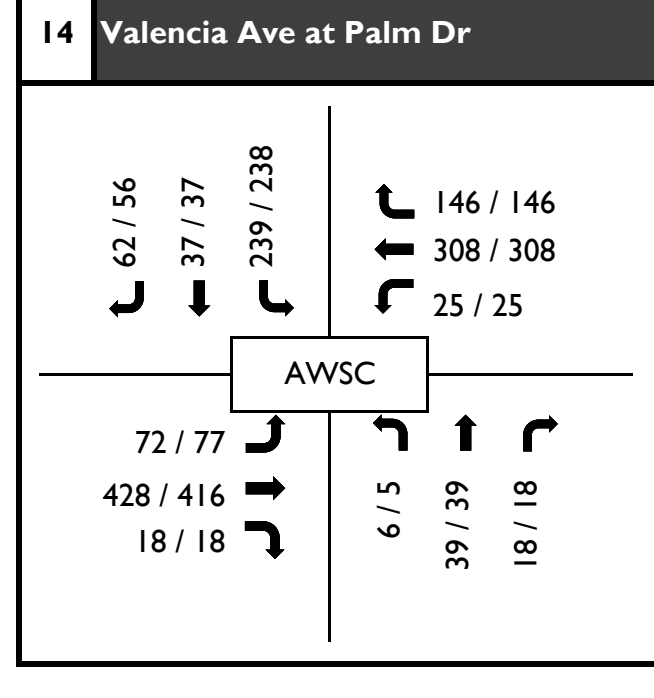
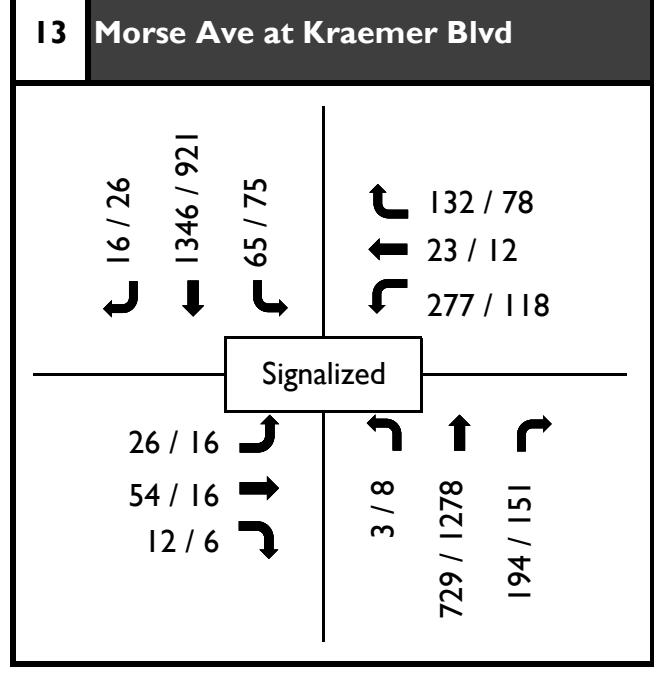
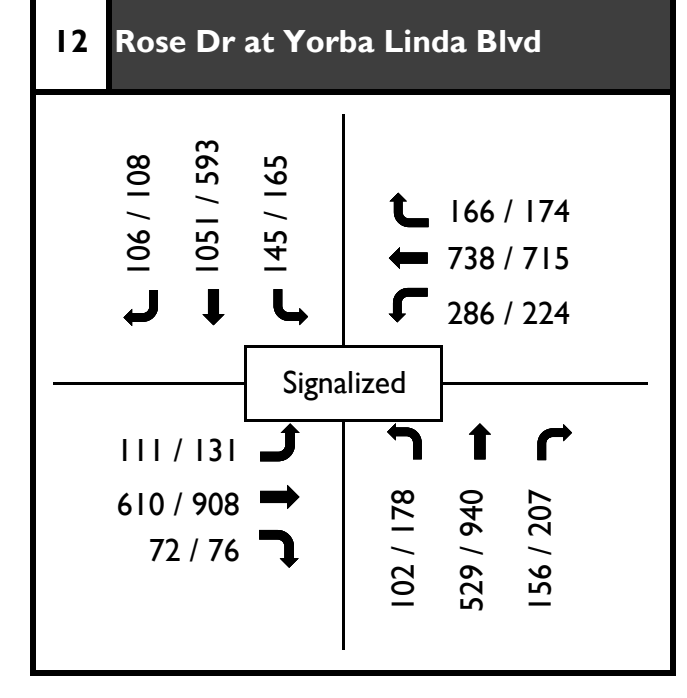
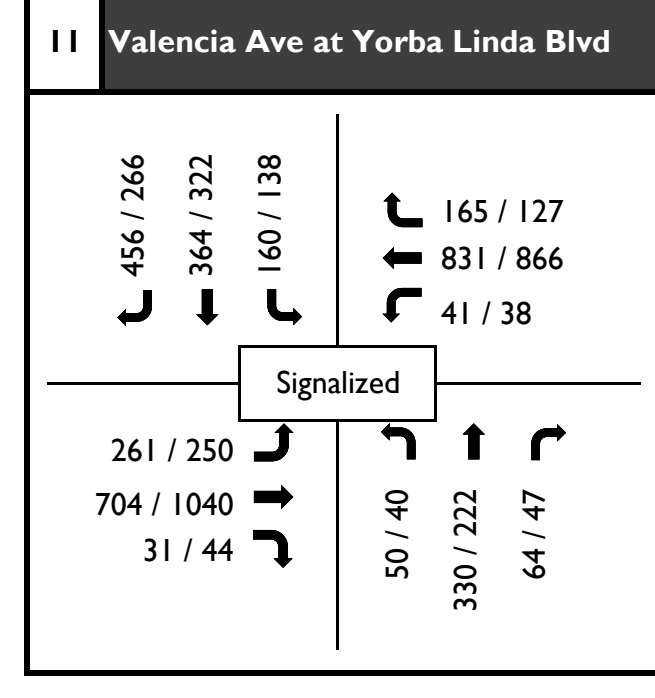
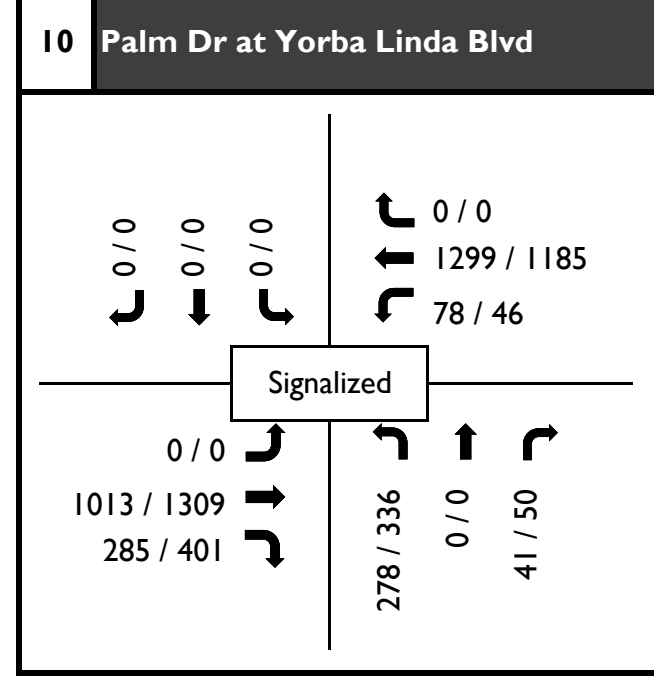
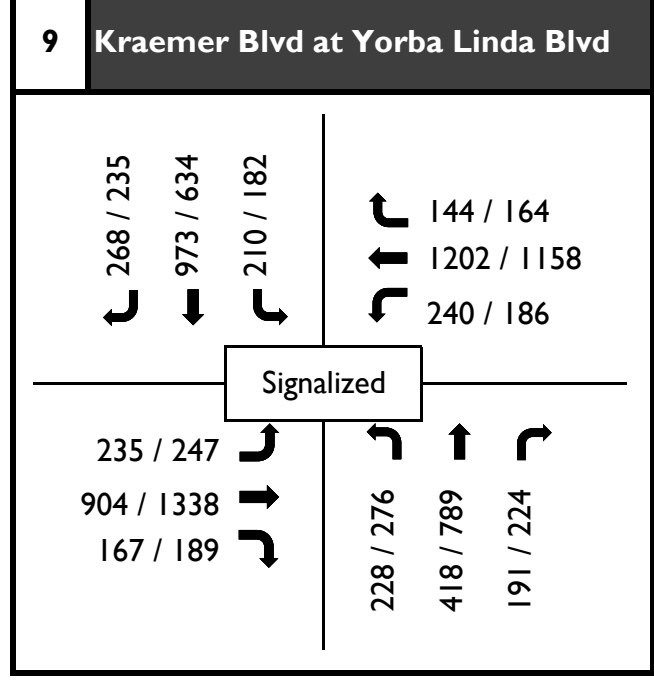
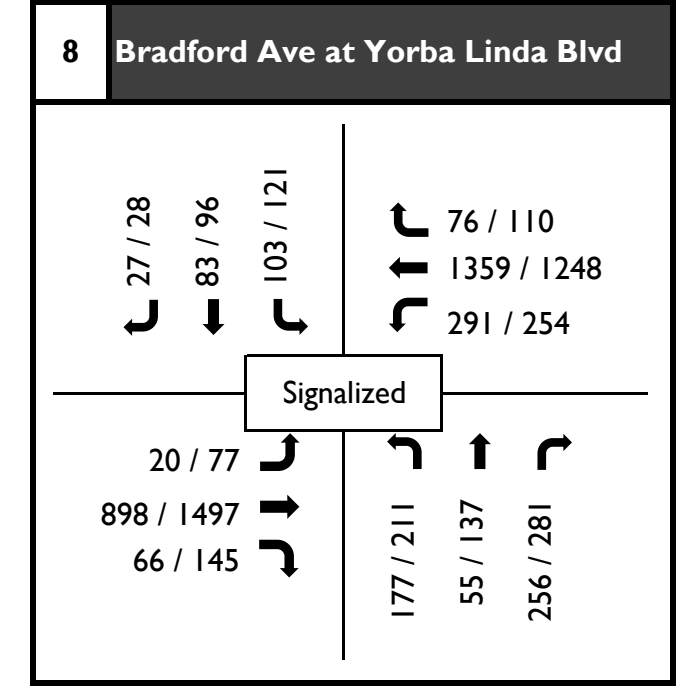
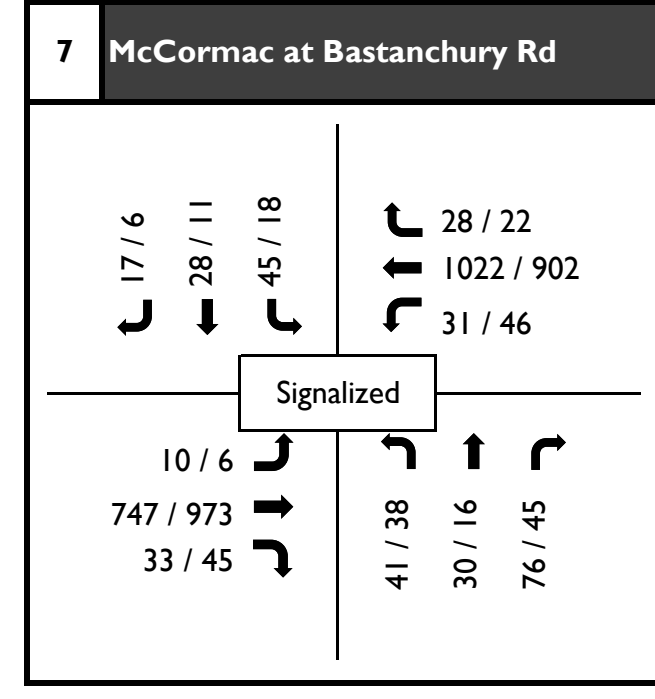
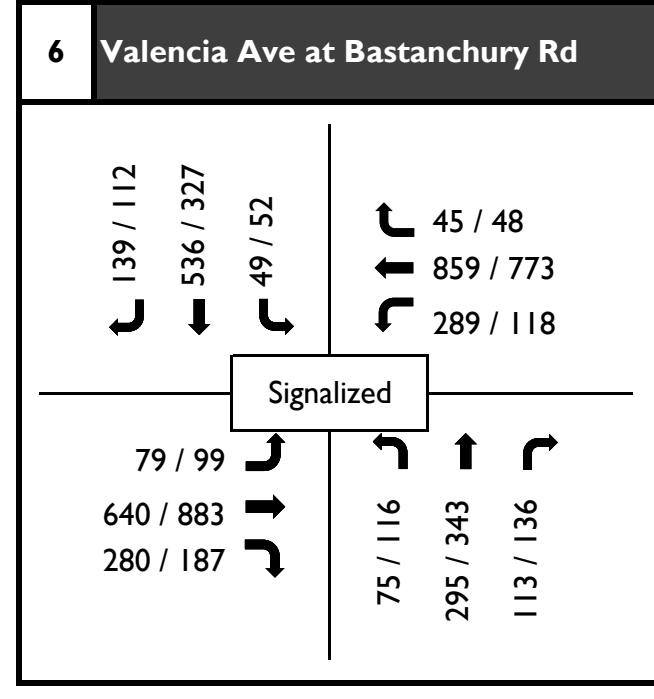
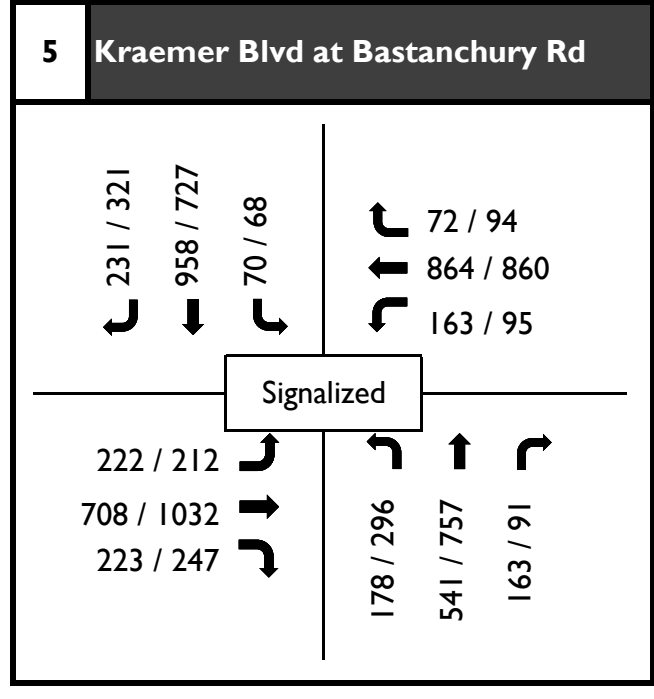
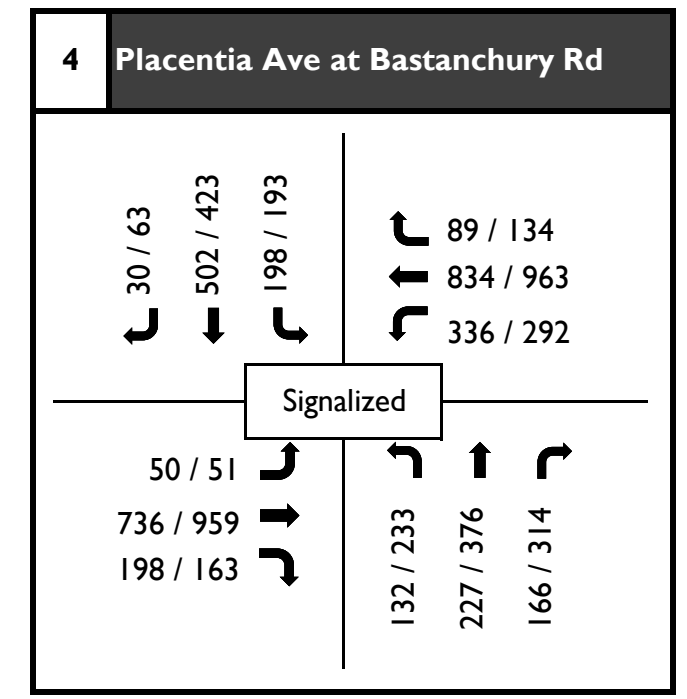
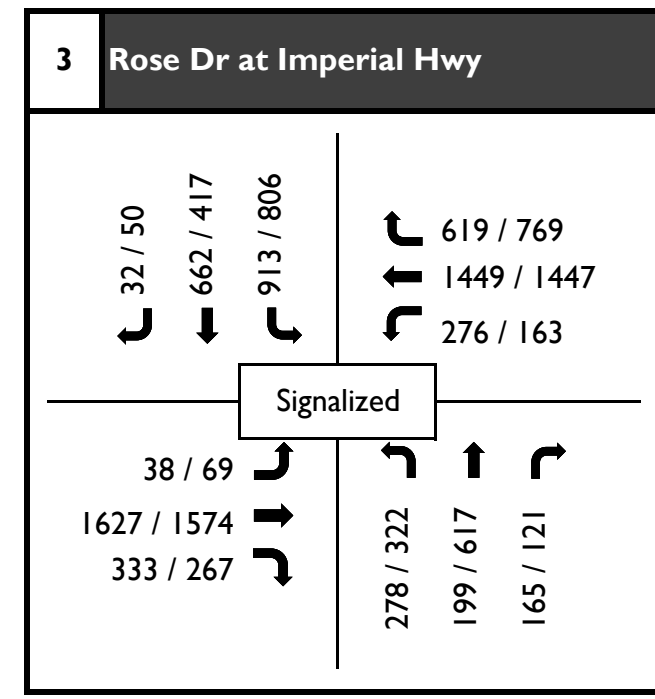
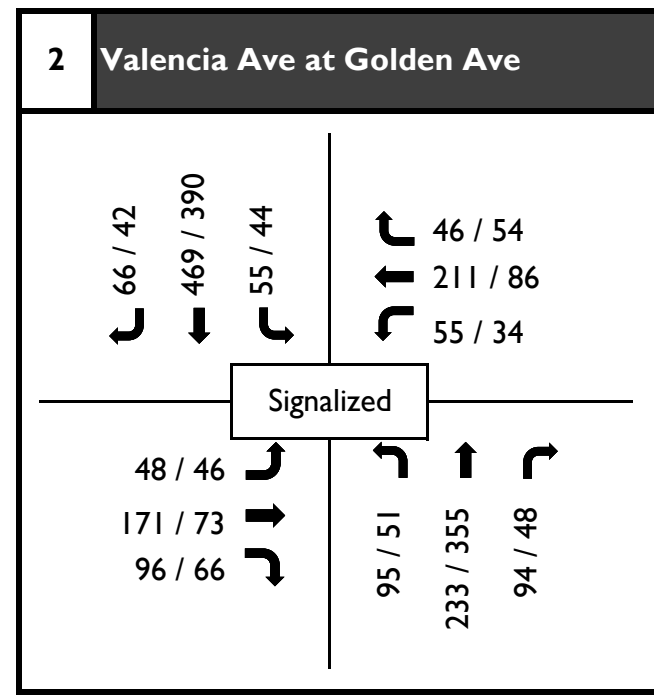
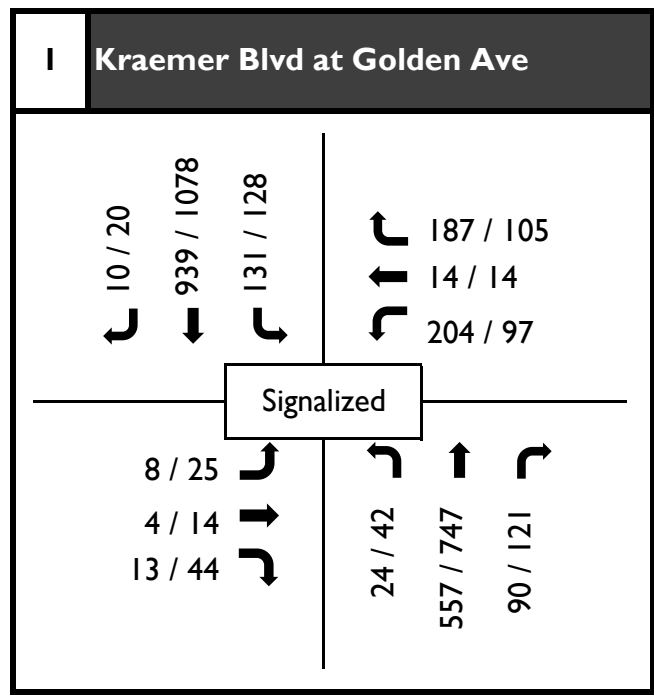
5.4.2 Proposed General Plan Intersection Level-of-service

Peak hour intersection Level-of-service analysis for the Proposed General Plan Scenario was conducted for the 42 study intersections. Figure 5-6 shows the Proposed General Plan AM and PM peak hour turning movement traffic volumes.

The Proposed General Plan intersection level-of-service analysis results are summarized in Table 5-10 for AM and PM peak hours. As shown in Table 5-10, the majority of the intersections in Placentia are expected to operate at acceptable levels of service under the Proposed General Plan scenario. The

following five intersections are expected to operate at unacceptable LOS E or F conditions during AM and PM peak hours:

- Rose Drive at Imperial Highway during the AM and PM peak hours
- Morse Ave at Kraemer Blvd during the AM peak hour
- Kraemer Blvd at Chapman Ave during the PM peak hour
- Orangethorpe Avenue at SR-57 Northbound Ramps during the PM peak hour
- Orangethorpe Avenue at Melrose Street during the PM peak hour



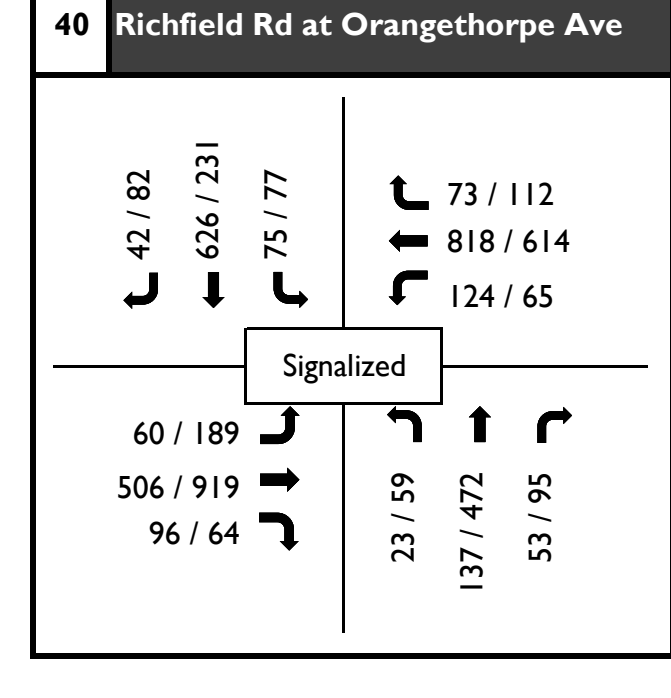
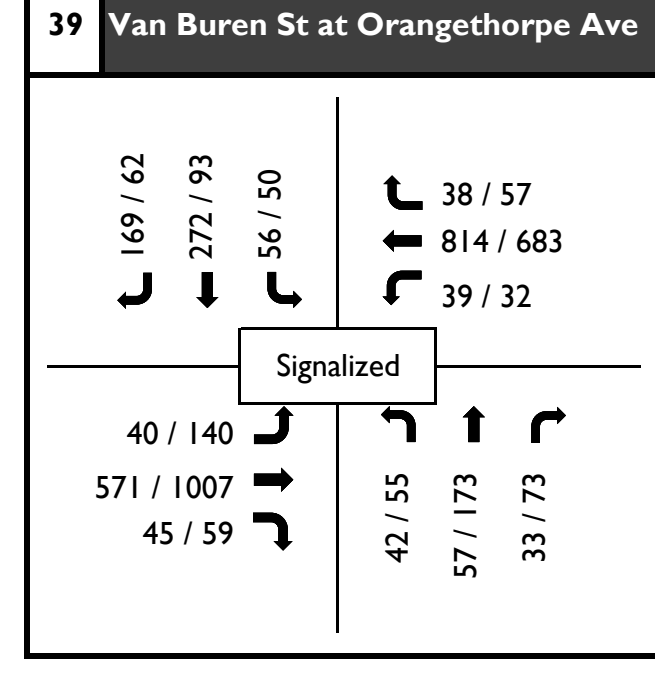
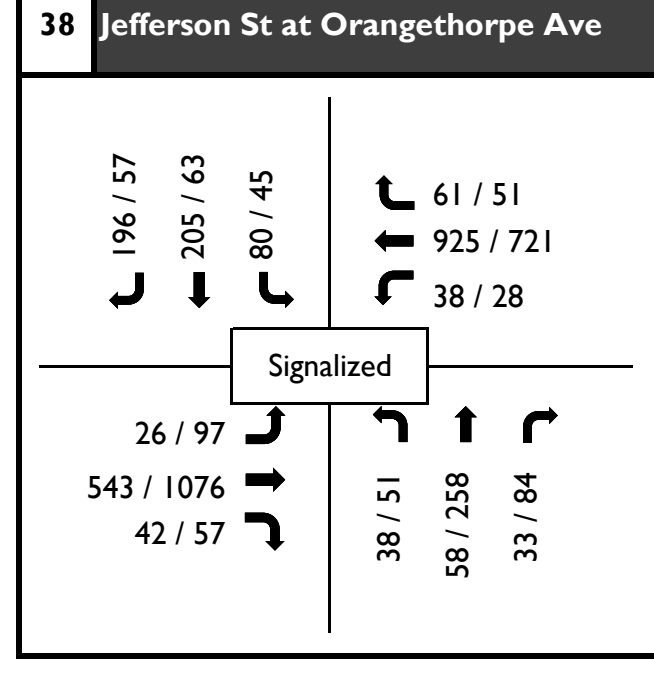
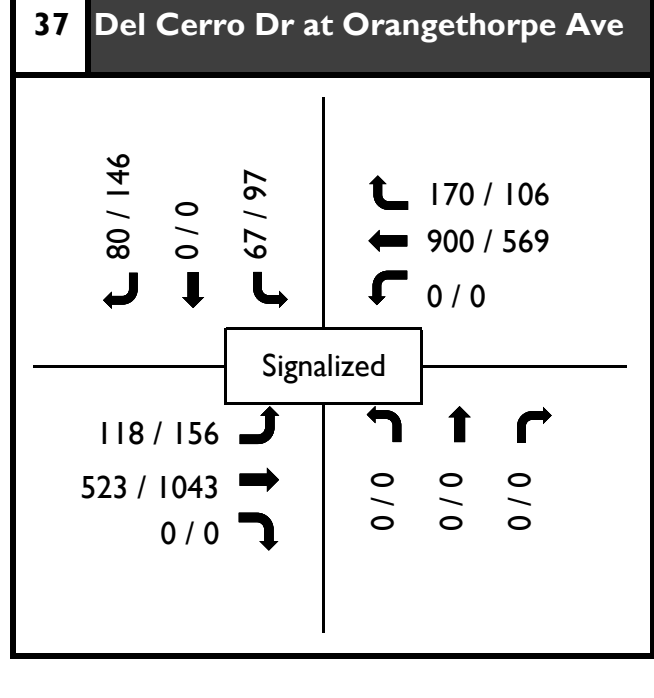
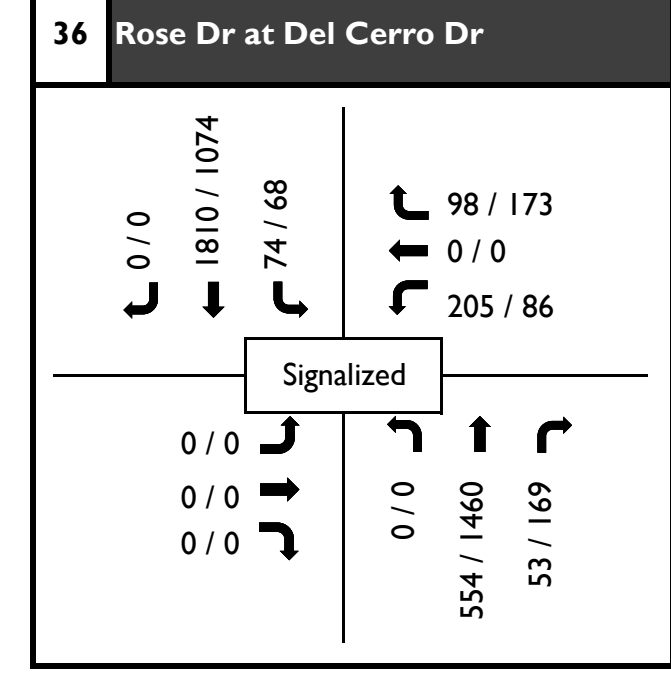
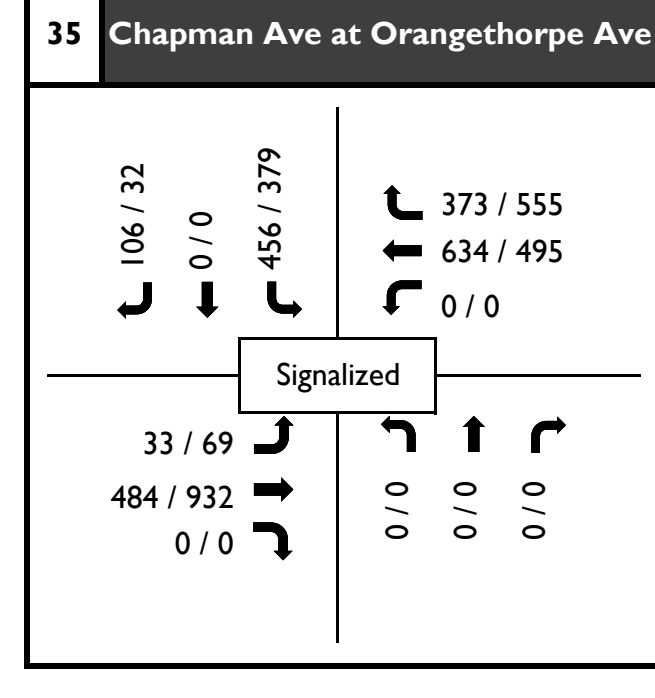
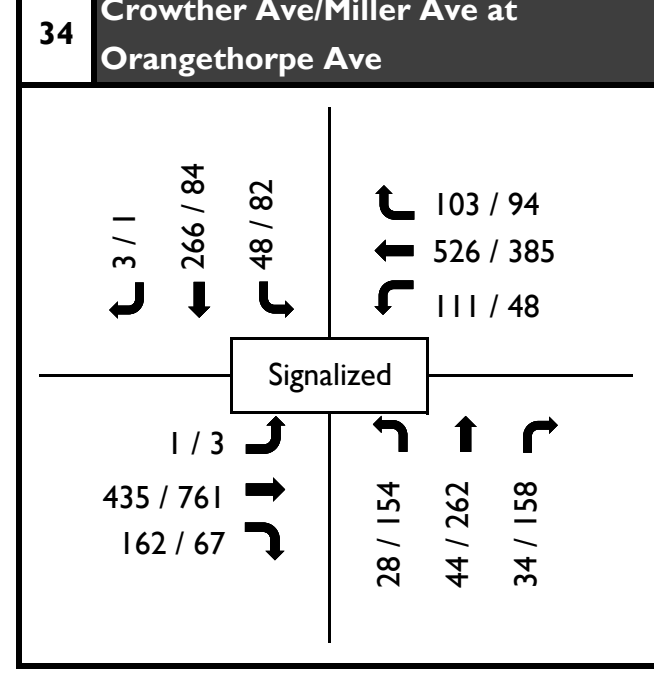
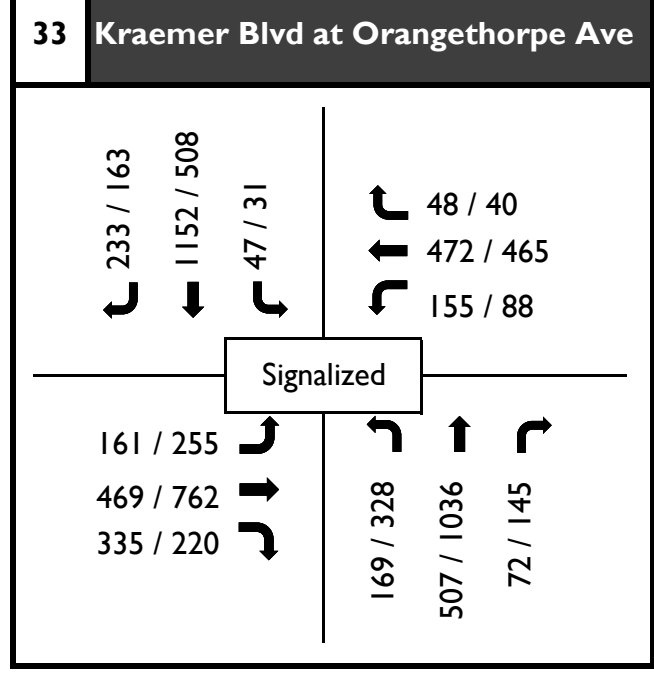
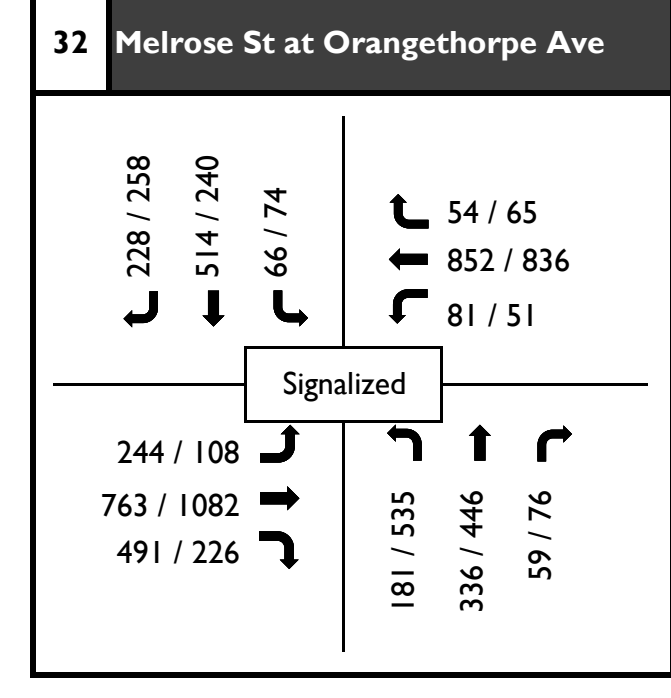
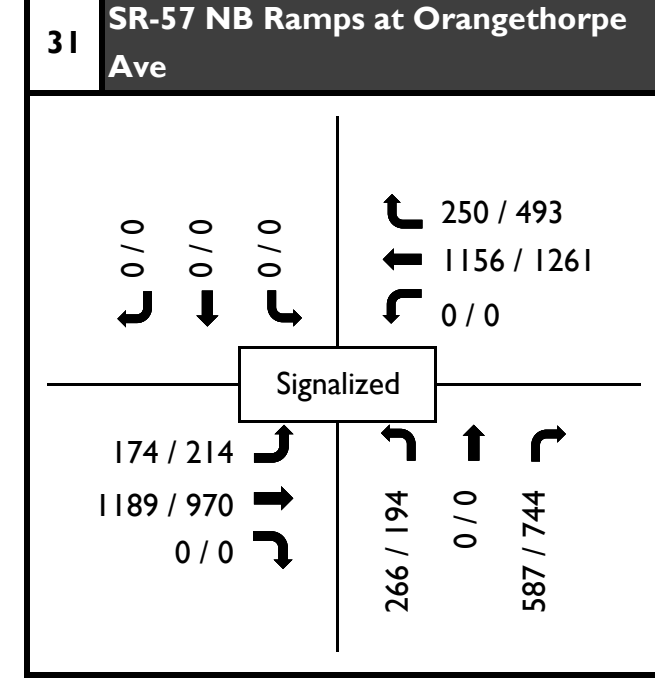
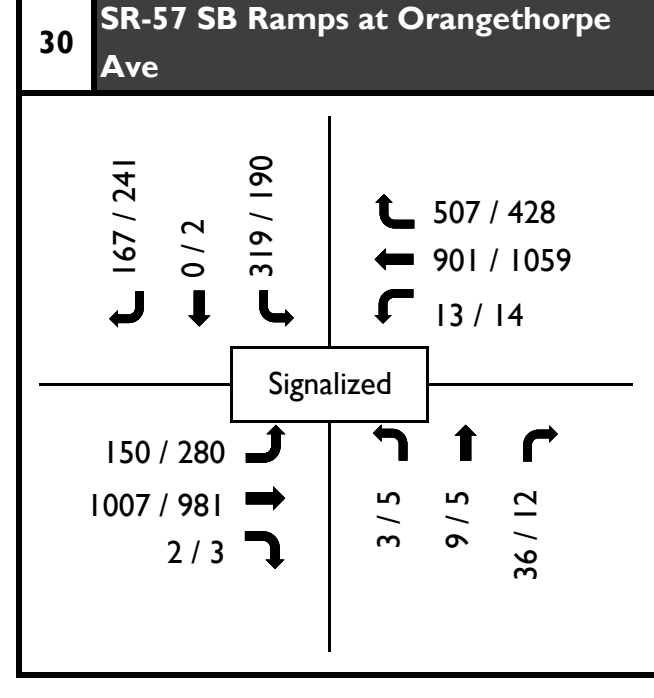
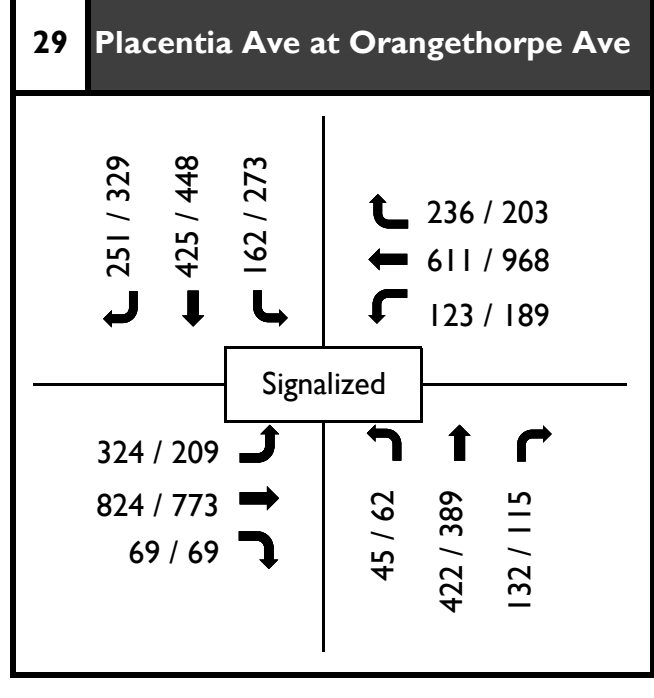
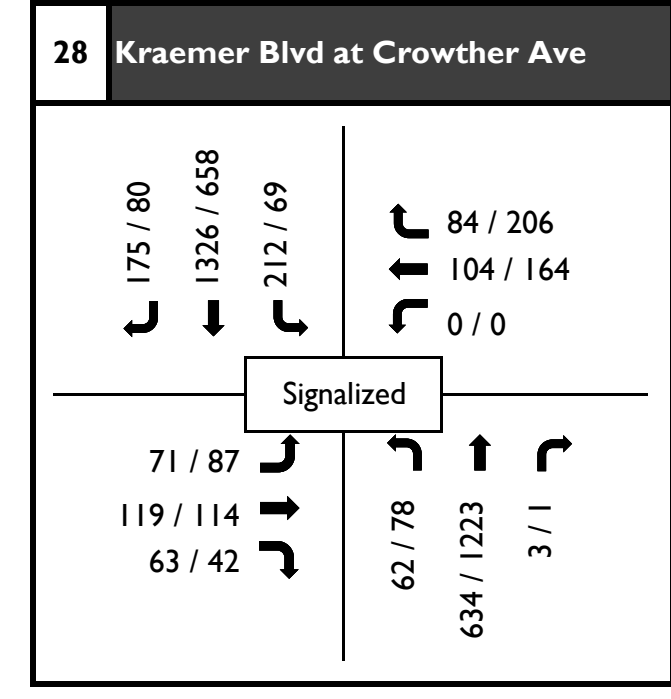
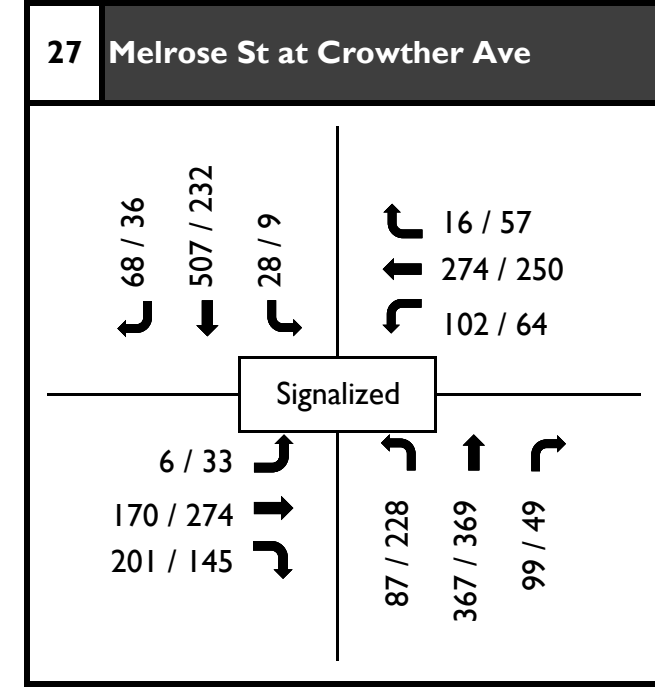
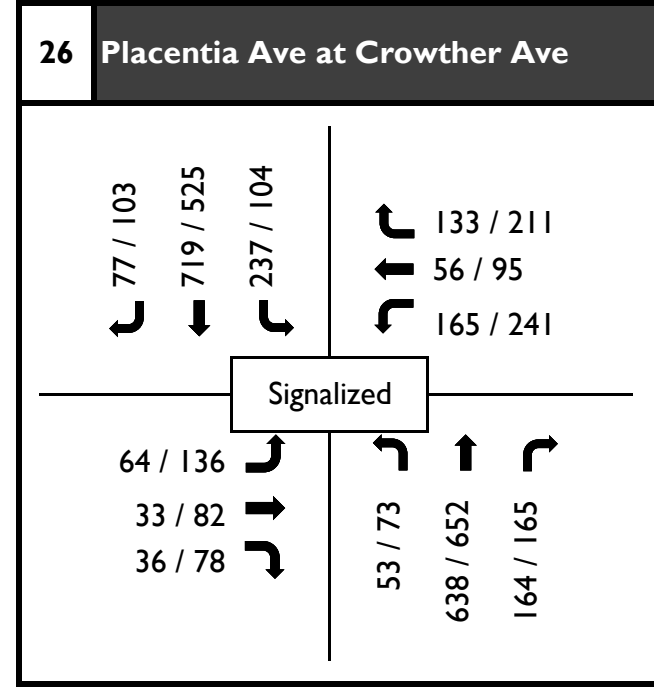
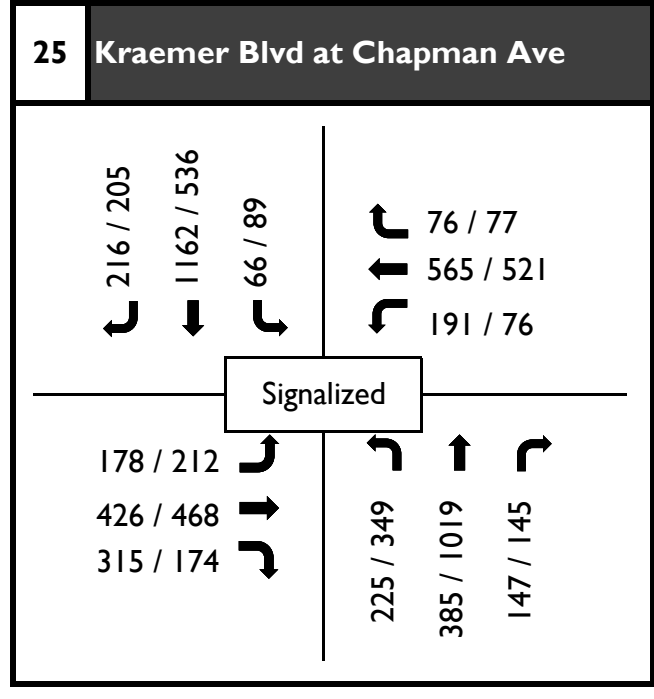
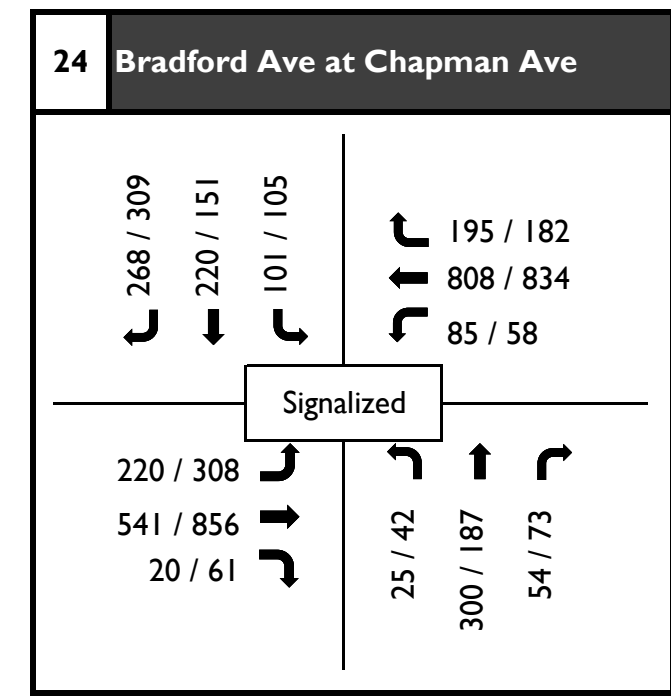
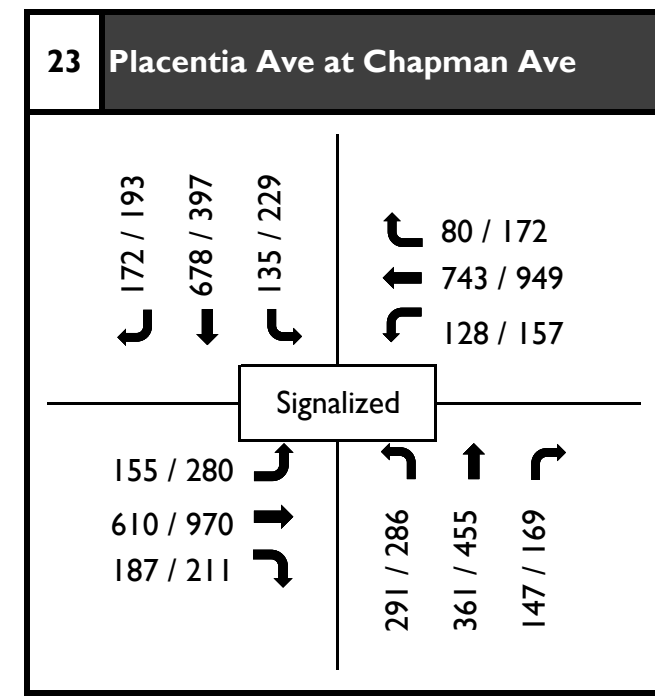
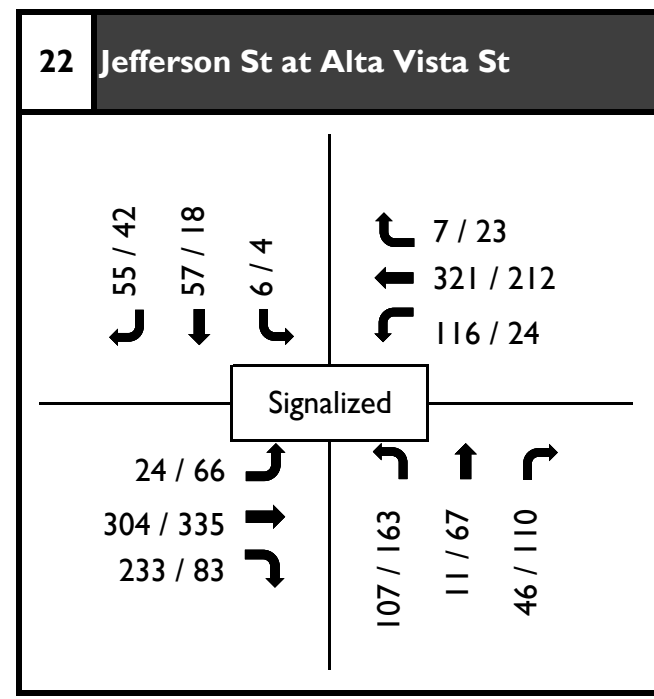
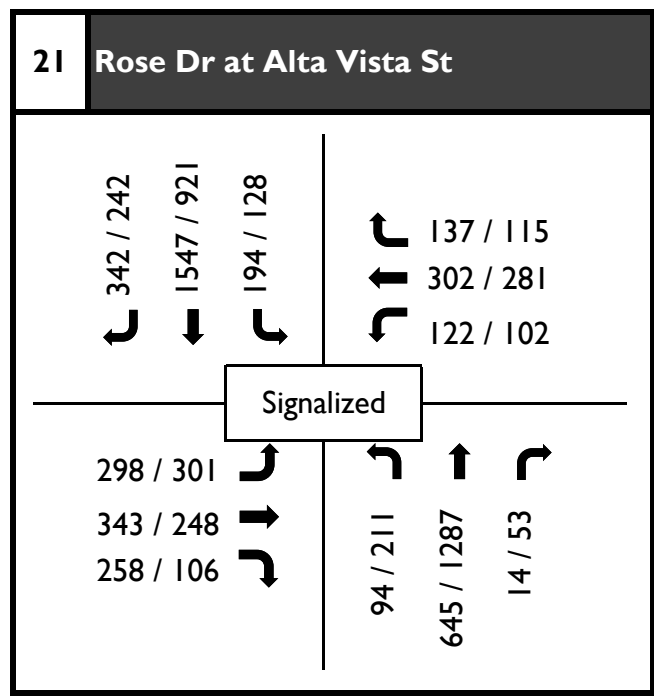
XX / XX AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign





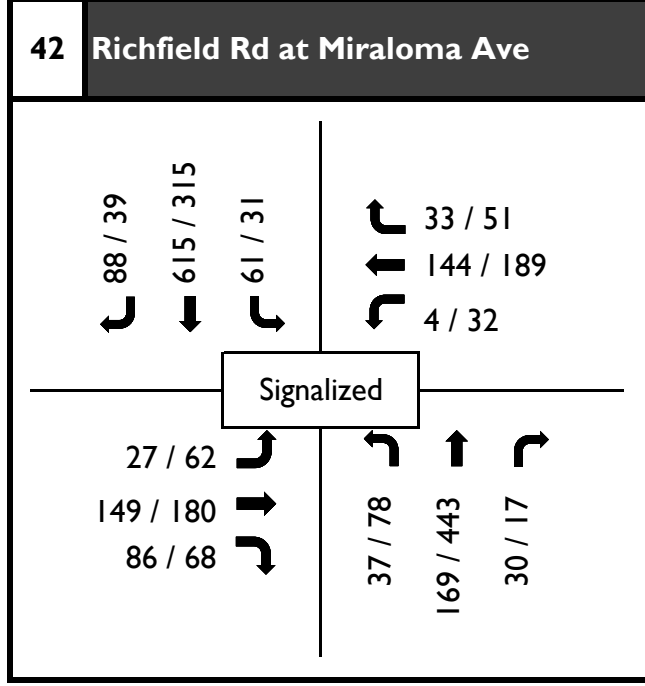
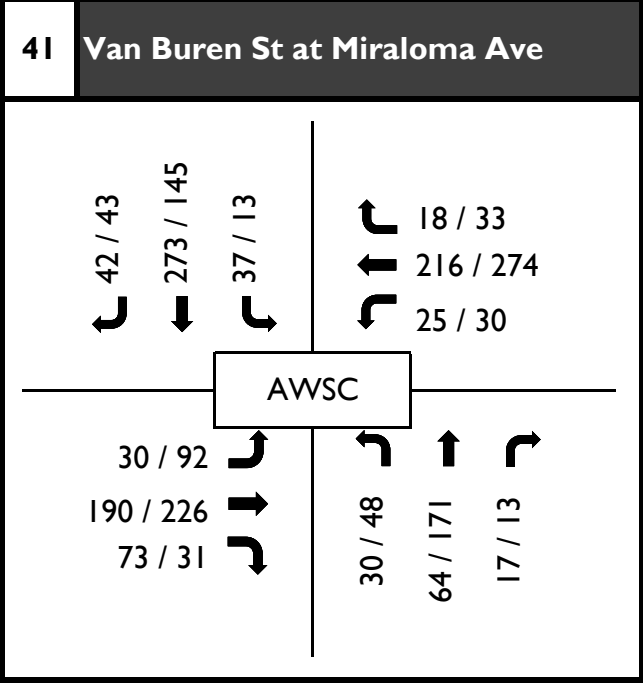
XX / XX AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign





XX / XX AM / PM Peak Hour Volumes

OWSC: One-way Stop Sign

TWSC: Two-way Stop Sign

AWSC: All-way Stop Sign



Figure 5-6: C

**TABLE 5-10 – INTERSECTION LEVEL-OF-SERVICE, PROPOSED GENERAL PLAN (YEAR 2040) SCENARIO**

ID	Study Intersection	AM Peak Hour			PM Peak Hour		
		ICU	HCM	LOS <sup>1</sup>	ICU	HCM	LOS <sup>1</sup>
1	Kraemer Blvd at Golden Ave	0.489	5.4	A	0.490	4.1	A
2	Valencia Ave at Golden Ave	0.435	5.7	A	0.297	3.9	A
3	Rose Dr at Imperial Hwy*	0.921	64.9	<b>E</b>	1.000	83.2	<b>F</b>
4	Placentia Ave at Bastanchury Rd	0.730	28.5	C	0.861	28.7	D
5	Kraemer Blvd at Bastanchury Rd	0.740	28.1	C	0.813	43.8	D
6	Valencia Ave at Bastanchury Rd	0.683	19.6	B	0.604	15.5	B
7	McCormac at Bastanchury Rd	0.500	3.9	A	0.466	2.7	A
8	Bradford Ave at Yorba Linda Blvd	0.651	15.3	B	0.795	19.9	C
9	Kraemer Blvd at Yorba Linda Blvd	0.691	38.5	D	0.837	41.1	D
10	Palm Dr at Yorba Linda Blvd	0.551	5.3	A	0.551	5.8	A
11	Valencia Ave at Yorba Linda Blvd	0.782	35.2	D	0.680	25.5	C
12	Rose Dr at Yorba Linda Blvd	0.804	35.5	D	0.863	46.7	D
13	Morse Ave at Kraemer Blvd	0.690	125.1	<b>F</b>	0.585	48.5	D
15	Palm Dr at Rose Dr	0.873	54.8	D	0.691	29.2	C
16	Madison Ave at Bradford Ave	0.565	12.5	B	0.530	12.3	B
17	Madison Ave at Kraemer Blvd	0.874	17.8	D	0.621	9.8	B
18	Buena Vista Ave at Rose Dr	0.845	13.8	D	0.757	14.1	C
19	Nutwood Ave at Placentia Ave	0.756	12.4	C	0.648	15.4	B
20	Kraemer Blvd at Alta Vista St	0.787	30.9	C	0.841	34.7	D
21	Rose Dr at Alta Vista St	0.719	29.6	C	0.675	25.9	C
22	Jefferson St at Alta Vista St	0.389	7.9	A	0.321	7.4	A
23	Placentia Ave at Chapman Ave	0.681	25.6	C	0.783	31.5	C
24	Bradford Ave at Chapman Ave	0.678	17.7	B	0.773	19.7	C
25	Kraemer Blvd at Chapman Ave	0.787	44.5	D	0.712	71.9	<b>E</b>
26	Placentia Ave at Crowther Ave	0.590	6.9	A	0.616	9.5	B
27	Melrose St at Crowther Ave	0.470	14.3	B	0.483	19.3	B
28	Kraemer Blvd at Crowther Ave	0.607	15.7	B	0.527	14.1	B
29	Placentia Ave at Orangethorpe Ave	0.634	30.8	C	0.658	29.6	C
30	SR-57 SB Ramps at Orangethorpe Ave*	0.583	14.3	B	0.560	14.7	B
31	SR-57 NB Ramps at Orangethorpe Ave*	0.758	19.0	C	0.939	65.9	<b>E</b>
32	Melrose St at Orangethorpe Ave	0.721	27.8	C	0.827	87.3	<b>F</b>
33	Kraemer Blvd at Orangethorpe Ave	0.815	36.8	D	0.701	54.6	D
34	Crowther Ave/Miller Ave at Orangethorpe Ave	0.434	15.3	B	0.465	39.0	D
35	Chapman Ave at Orangethorpe Ave	0.443	7.7	A	0.554	7.5	A
36	Rose Dr at Del Cerro Dr*	0.674	6.2	B	0.482	5.4	A
37	Del Cerro Dr at Orangethorpe Ave*	0.334	5.5	A	0.312	5.4	A

ID	Study Intersection	AM Peak Hour			PM Peak Hour		
		ICU	HCM	LOS <sup>1</sup>	ICU	HCM	LOS <sup>1</sup>
38	Jefferson St at Orangethorpe Ave	0.503	12.6	B	0.552	13.7	B
39	Van Buren St at Orangethorpe Ave	0.521	13.2	B	0.538	13.5	B
40	Richfield Rd at Orangethorpe Ave	0.561	16.3	B	0.598	23.9	C
42	Richfield Rd at Miraloma Ave	0.362	6.5	A	0.321	7.5	A
	Unsignalized Intersections (HCM)	ICU	HCM	LOS	ICU	HCM	LOS
14	Valencia Ave at Palm Dr	NA	19.0	C	NA	18.2	C
41	Van Buren St at Miraloma Ave	NA	13.0	B	NA	13.7	B

<sup>1</sup> LOS are based on worst case of ICU and HCM

\*OCTA Congestion Management Plan (CMP) locations

The intersection of Palm Drive and Rose Drive would operate at a LOS value of E during the AM peak hour under the Current General Plan scenario, with 55 seconds of delay per vehicle based on the HCM method. 55 seconds is the threshold between LOS values of D and E by HCM standard. The intersection would operate at a LOS value of D during the AM Peak hour under the Proposed General Plan scenario, with 54.8 seconds of delay per vehicle based on the HCM method, which just falls below the threshold of the LOS value of E. The very small change of delay in seconds is due to the land use revision from the Current General Plan to Proposed General Plan.

Appendix H contains the intersection operations analysis worksheets for the Proposed General Plan conditions, with existing geometry.



# 6.0 RECOMMENDED TRANSPORTATION IMPROVEMENTS

## 6.1 RECOMMENDED IMPROVEMENTS, CURRENT GENERAL PLAN SCENARIO

Under the Current General Plan scenario, the effects of regional traffic growth are forecast to result in declines in levels of service to below acceptable levels on five roadway segment and at six specific roadway intersections. Most of the expected declines in levels of service can be addressed through improvements to general roadway configurations consistent with planned Master Plan of Arterial Highways (MPAH) classifications and through specific intersection improvements. Recommendations for changes to these roadways and intersections to improve operating conditions are presented below.

### 6.1.1 Roadway Improvements for Current General Plan Scenario

Changes in roadway configuration are recommended for five roadway segments under the Current General Plan scenario. All five of these segments are currently operating at acceptable levels. However, with the regional traffic growth and Current General Plan land use applied to the existing roadway configurations, they would operate below acceptable levels. The recommended improvements are consistent with the planned MPAH configurations of these roadways and will improve operating conditions for all of these roadway segments.

#### 6.1.1.1 Chapman Avenue, from Placentia Avenue to Bradford Avenue

It is recommended that this segment of Chapman Avenue be considered for improvement from its current 4-lane undivided Modified Primary Arterial configuration to a 4-lane divided Primary Arterial configuration (its ultimate MPAH classification).

#### 6.1.1.2 Placentia Avenue, from Chapman Avenue to Primrose Avenue

It is recommended that this segment of Placentia Avenue be considered for improvement from its current 2-lane unclassified Collector configuration to a 4-lane divided Primary Arterial configuration (consistent with its ultimate MPAH classification).

#### 6.1.1.3 Kraemer Boulevard, from South City Limit to Orangethorpe Avenue

It is recommended that this segment of Kraemer Boulevard be considered for improvement from its current 4-lane Primary Arterial configuration, to a 6-lane divided Major Arterial configuration (consistent with its ultimate MPAH classification).

#### 6.1.1.4 Rose Drive, from Alta Vista Street to Palm Drive

It is recommended that this segment of Rose Drive be considered for improvement from its current 4-lane divided Primary Arterial configuration to a 6-lane divided Major Arterial configuration (consistent with its ultimate MPAH classification).

#### 6.1.1.5 Rose Drive, from City Limit south of Colden Avenue to North City Limit

It is recommended that this segment of Rose Drive be considered for improvement from its current 4-lane divided Primary Arterial configuration to a 6-lane divided Major Arterial configuration (consistent with its ultimate MPAH classification).

Table 6-1 summarizes expected levels of service for the five affected roadway segments with the proposed improvements under the Current General Plan scenario.

**TABLE 6-1 – CHANGE IN LEVEL-OF-SERVICE WITH IMPROVEMENTS, ROADWAY SEGMENTS, CURRENT GENERAL PLAN SCENARIO**

Roadway Segment	From	To	Volume	Existing Configuration			MPAH Configuration		
				Capacity	V/C*	LOS	Capacity	V/C*	LOS
Chapman Avenue	Placentia Avenue	Bradford Avenue	26,590	25,000	1.064	F	37,500	0.709	C
Placentia Avenue	Chapman Avenue	Primrose Avenue	24,640	25,000	0.986	E	37,500	0.657	B
Kraemer Boulevard	South City Limits	Orangethorpe Avenue	25,840	25,001	1.034	F	56,300	0.459	A
Rose Drive	Alta Vista Street	Palm Drive	34,630	37,500	0.923	E	56,300	0.615	B
Rose Drive	City Limit s/o Golden Avenue	North City Limit	29,550	25,000	1.182	F	56,300	0.525	A

Note: volume to capacity ratio

### 6.1.2 Intersection Improvements for Current General Plan Scenario

Recommended measures to improve operating conditions at six specific intersections under the Current General Plan Scenario are presented below. The proposed improvements are expected to mitigate the negative effects of increased traffic through incorporation of various traffic control and intersection capacity improvement measures.

#### 6.1.2.1 Rose Drive at Imperial Highway

The increase in traffic volumes will require improvements to this intersection by 2040. The following improvements are recommended to improve operating conditions:

- Install westbound right-turn overlap traffic signal phasing
- Optimize signal timing

These changes will improve operating conditions at the intersection of Imperial Highway and Rose Drive to a LOS value of E, considered acceptable for State Highway intersections.

#### 6.1.2.2 Kraemer Boulevard at Morse Avenue

This intersection is currently operating at a LOS value of F during the AM peak hour. The intersection would continue to operate at a LOS value of F during the AM peak hour under the Current General Plan scenario. The following improvement is therefore recommended to improve operating conditions:

- Restripe the left –through lane to left-turn only lane
- Restripe the right-turn only lane to through-right turn lane

This change will improve operating conditions at the intersection of Kraemer Boulevard and Morse Avenue to a LOS value of B during the AM peak hour.

#### *6.1.2.3 Rose Drive at Palm Drive*

The regional traffic growth will result in traffic volume increases on Rose Drive which will require improvements to this intersection by 2040. Additional southbound through capacity will be required to improve operating conditions during the AM peak hour. This will be consistent with the MPAH. The southbound approaches at the intersection currently include one left-turn only lane, one through lane and one through-right turn lane. The through-right turn lane is approximately 21 feet wide. Therefore, we considered a defector right-turn lane under the existing conditions for LOS analysis.

The following improvement is therefore recommended at the intersection of Rose Drive and Palm Avenue, and the proposed improvement can be done by restriping alone:

- Restripe the southbound approaches to the following configuration:
  - 1 left-turn only lane,
  - 2 through lanes
  - 1 through-right turn lane

This change will improve operating conditions at the intersection of Rose Drive and Palm Avenue to a LOS value of C during the AM peak hour, considered acceptable by City of Placentia.

#### *6.1.2.4 Chapman Avenue at Kraemer Boulevard*

Additional northbound left-turn capacity will be required to improve operating conditions at this intersection during the PM peak hour. The following improvements are therefore recommended at the intersection of Kraemer Boulevard and Chapman Avenue to improve operating conditions:

- Northbound left-turn phasing changed from protected to protected and permissive

This change will improve operating conditions at the intersection of Kraemer Boulevard and Chapman Avenue from a LOS value of E to a LOS value of C during the PM peak hour.

#### *6.1.2.5 Orangethorpe Avenue at SR-57 Northbound Ramps*

Expected traffic volume increases on Orangethorpe Avenue at the SR-57 Freeway, due primarily to regional traffic growth will require capacity improvements to maintain acceptable operating conditions. The following improvements are recommended:

- Restripe the Northbound Off Ramp to the following configuration:
  - 1 left-turn only lane
  - 1 left-right shared lane
  - 1 right-turn only lane

This change will improve operating conditions at the intersection of Orangethorpe Avenue and SR-57 Northbound Ramps from a LOS value of E to a LOS value of C during the PM peak hour.

#### *6.1.2.6 Orangethorpe Avenue at Melrose Street*

Additional northbound left-turn capacity will be required to improve operating conditions at this intersection during the PM peak hour. The following improvements are therefore recommended at the

intersection of Orangethorpe Avenue and Melrose Street:

- Northbound left-turn phasing changed from protected to protected and permissive

This change will improve operating conditions at the intersection of Orangethorpe Avenue and Melrose Street from a LOS value of F to a LOS value of C during the PM peak hour.

Table 6-2 summarizes the expected levels of service for the six affected intersections with the proposed improvements under the Current General Plan scenario.

**TABLE 6-2 – CHANGE IN LEVEL-OF-SERVICE WITH IMPROVEMENTS, STUDY INTERSECTIONS, CURRENT GENERAL PLAN SCENARIO**

ID	Study Intersections	Peak Hour	Current General Plan				with Mitigation			
			ICU	HCM	LOS	LOS Below Acceptable Level?	ICU	HCM	LOS	LOS Below Acceptable Level?
3	Rose Dr at Imperial Hwy*	AM	0.921	64.8	E	Yes	0.921	60.9	E	No
		PM	0.999	82.9	F	Yes	0.912	61.4	E	No
13	Morse Ave at Kraemer Blvd	AM	0.690	125.4	F	Yes	0.690	13.1	B	No
		PM	0.59	48.4	D	No	0.585	8.7	A	No
15	Palm Dr at Rose Dr	AM	0.874	55.0	E	Yes	0.745	25.2	C	No
		PM	0.69	29.1	C	No	0.610	27.3	C	No
25	Kraemer Blvd at Chapman Ave	AM	0.787	44.5	D	No	0.787	30.3	C	No
		PM	0.71	71.8	E	Yes	0.711	26.9	C	No
31	SR-57 NB Ramps at Orangethorpe Ave*	AM	0.752	18.7	C	No	0.569	11.5	A	No
		PM	0.93	64.8	E	Yes	0.704	19.9	C	No
32	Melrose St at Orangethorpe Ave	AM	0.721	27.8	C	No	0.721	24.3	C	No
		PM	0.820	87.5	F	Yes	0.820	28.9	C	No

Appendix I contains the intersection operations analysis worksheets for the Current General Plan conditions, with improvements.

## 6.2 RECOMMENDED IMPROVEMENTS, PROPOSED GENERAL PLAN SCENARIO

Under the Proposed General Plan scenario, the combined effects of regional traffic growth and local land use changes are forecast to result in declines in levels of service to below acceptable levels on five roadway segment and at five specific roadway intersections. The expected declines in levels of service can be addressed through improvements to general roadway configurations consistent with planned MPAH classifications and through specific intersection improvements. Recommendations for changes to these roadways and intersections to improve operating conditions are presented below.

### 6.2.1 Roadway Improvements for Proposed General Plan Scenario

Roadway improvement recommendations for the Proposed General Plan Scenario are identical as those

for the Current General Plan Scenario. The same five roadway segments would operate at unacceptable LOS values of E or F with the existing capacity under both the Current General Plan Scenario and the Proposed General Plan Scenario. With the 2017 OCTA MPAH Classification capacity, all the five roadway segments would operate at acceptable LOS values under both scenarios. No additional improvement is needed for the Proposed General Plan Scenario.

Table 6.3 summarizes expected levels of service for the five affected roadway segments with the proposed improvements under the Proposed General Plan scenario.

**TABLE 6-3 – CHANGE IN LEVEL-OF-SERVICE WITH IMPROVEMENTS, ROADWAY SEGMENTS, PROPOSED GENERAL PLAN SCENARIO**

Roadway Segment	From	To	Volume	Existing Configuration			MPAH Configuration		
				Capacity	V/C*	LOS	Capacity	V/C*	LOS
Chapmand Avenue	Placentia Avenue	Bradford Avenue	26,790	25,000	1.072	F	37,500	0.714	C
Placentia Avenue	Chapman Avenue	Primrose Avenue	24,640	25,000	0.986	E	37,500	0.657	B
Kraemer Boulevard	South City Limits	Orangethorpe Avenue	25,840	25,001	1.034	F	56,300	0.459	A
Rose Drive	Alta Vista Street	Palm Drive	34,760	37,500	0.927	E	56,300	0.617	B
Rose Drive	City Limit s/o Golden Avenue	North City Limit	29,680	25,000	1.187	F	56,300	0.527	A

*Note: volume to capacity ratio*

### 6.2.2 Intersection Improvements for Proposed General Plan Scenario

Under the Proposed General Plan Scenario, the following five intersections would operate at unacceptable LOS values:

- Rose Drive at Imperial Highway
- Kraemer Boulevard at Morse Avenue
- Chapman Avenue at Kraemer Boulevard
- Orangethorpe Avenue at SR-57 Northbound Ramps
- Orangethorpe Avenue at Melrose Street

All of the five intersections are among the six intersections that recommended for improvement under the Current General Plan scenario. The recommended improvements for these five intersections under the Proposed General Plan scenario are the same as those under the Current General Plan scenario.

Table 6-4 summarizes the expected levels of service for the five affected intersections with the proposed improvements under the Proposed General Plan scenario.

**TABLE 6-4 – CHANGE IN LEVEL-OF-SERVICE WITH IMPROVEMENTS, STUDY INTERSECTIONS, PROPOSED GENERAL PLAN SCENARIO**

ID	Study Intersections	Peak Hour	Proposed General Plan				with Mitigation			
			ICU	HCM	LOS	LOS Below Acceptable Level?	ICU	HCM	LOS	LOS Below Acceptable Level?
3	Rose Dr at Imperial Hwy*	AM	0.921	64.9	E	Yes	0.921	61.0	E	No
		PM	1.000	83.2	F	Yes	0.912	61.6	E	No
13	Morse Ave at Kraemer Blvd	AM	0.690	125.1	F	Yes	0.690	13.0	B	No
		PM	0.585	48.5	D	No	0.585	8.7	A	No
25	Kraemer Blvd at Chapman Ave	AM	0.787	44.5	D	No	0.787	30.3	C	No
		PM	0.712	71.9	E	Yes	0.712	24.4	C	No
31	SR-57 NB Ramps at Orangethorpe Ave*	AM	0.758	19.0	C	No	0.576	11.6	A	No
		PM	0.939	65.9	E	Yes	0.709	20.5	C	No
32	Melrose St at Orangethorpe Ave	AM	0.721	27.8	C	No	0.721	24.3	C	No
		PM	0.827	87.3	F	Yes	0.827	29.1	C	No

Appendix J contains the intersection operations analysis worksheets for the Proposed General Plan conditions, with improvements.

# APPENDIX A – ROADWAY DAILY TRAFFIC COUNT DATA SHEETS

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**CITY OF PLACENTIA  
CITYWIDE TRAFFIC COUNTS - 2016**

<b>ID #</b>	<b>STREET</b>	<b>SEGMENT</b>
1	All America Way	Alta Vista St. to Chapman Ave.
2	Alta Vista St.	Angelina Dr. to Kreamer Blvd.
3	Alta Vista St.	Kreamer Blvd. to Rose Dr.
4	Alta Vista St.	Rose Dr. to Van Buren St.
5	Angelina Dr.	Chapman Ave. to Alta Vista St.
6	Bastanchury Rd.	Western City Limit to Kreamer Blvd.
7	Bastanchury Rd.	Kreamer Blvd. to Valencia Ave.
8	Bastanchury Rd.	Valencia Ave. to Eastern City Limit
9	Bradford Ave.	Santa Fe Ave. to Chapman Ave.
10	Bradford Ave.	Chapman Ave. to Madison Ave.
11	Bradford Ave.	Madison Ave. to Northern City Limit
12	Buena Vista Ave.	Rose Dr. to Eastern City Limit
13	Central Ave.	Chapman Ave. to Alta Vista St.
14	Chapman Ave.	Placentia Ave. to Bradford Ave.
15	Chapman Ave.	Bradford Ave. to Kraemer Blvd.
16	Chapman Ave.	Kraemer Blvd. to Orangethorpe Ave.
17	Crowther Ave.	Placentia Ave. to Melrose St.
18	Crowther Ave.	Melrose St. to Eastern City Limit
19	Golden Ave.	Kreamer Blvd. to Valencia Ave.
20	Golden Ave.	Valencia Ave. to Eastern City Limit
21	Highland Ave.	Orangethorpe Ave. to Northern City Limit
22	Jefferson St.	Southern City Limit to Orangethorpe Ave.
23	Jefferson St.	Orangethorpe Ave. to Alta Vista St.
24	Jefferson St.	Alta Vista St. to Garten Dr.
25	Kreamer Blvd.	Southern City Limit to Orangethorpe Ave.
26	Kreamer Blvd.	Crowther Ave. to Chapman Ave.
27	Kreamer Blvd.	Chapman Ave. to Madison Ave.
28	Kreamer Blvd.	Madison Ave. to Yorba Linda Blvd.
29	Kreamer Blvd.	Yorba Linda Blvd. to Bastanchury Rd.
30	Kreamer Blvd.	Bastanchury Rd. to Norther City Limit
31	La Jolla St.	Placentia Ave. to Melrose St.
32	La Jolla St.	Melrose St. to Eastern City Limit
33	Lakeview Ave.	Southern City Limit to Northern City Limit
34	Linda Vista St.	Rose Dr. to Yorba Linda Blvd.
35	Madison Ave.	Western City Limit to Bradford Ave.
36	Madison Ave.	Bradford Ave. to Kraemer Blvd.
37	McCormack Ln.	Yorba Linda Blvd. to Northern City Limit
38	McCormack Ln.	Shadburn Ave. to Bastanchury Rd.
39	McCormack Ln.	Bastanchury Rd. to Golden Ave.
40	Melrose St.	Southern City Limit to Orangethorpe Ave.
41	Melrose St.	Orangethorpe Ave. to Crowther Ave.
42	Melrose St.	Crowther Ave. to Santa Fe Ave.
43	Mira Loma Ave.	Van Buren St. to Ritchfield Rd.
44	Mira Loma Ave.	Ritchfield Rd. to Lakeview Ave.



**CITY OF PLACENTIA  
CITYWIDE TRAFFIC COUNTS - 2016**

<b>ID #</b>	<b>STREET</b>	<b>SEGMENT</b>
45	Morse Ave.	Kreamer Blvd. to Venice Ave.
46	Orangethorpe Ave.	Placentia Ave. to Melrose St.
47	Orangethorpe Ave.	Melrose St. to Kreamer Blvd.
48	Orangethorpe Ave.	City Limit W/O Chapman Ave. to Chapman Ave.
49	Orangethorpe Ave.	Chapman Ave. to Rose Dr.
50	Orangethorpe Ave.	Rose Dr. to Eastern City Limit
51	Orchard Dr.	Van Buren St. to Ritchfield Rd.
52	Orchard Dr.	Ritchfield Rd. to Highland Ave.
53	Orchard Dr.	Highland Ave. to Lakeview Ave.
54	Palm Dr.	Yorba Linda Blvd. to Valencia Ave.
55	Palm Dr.	Valencia Ave. to Rose Dr.
56	Placentia Ave.	Southern City Limit to Orangethorpe Ave.
57	Placentia Ave.	Orangethorpe Ave. to Crowther Ave.
58	Placentia Ave.	Crowther Ave. to Chapman Ave.
59	Placentia Ave.	Chapman Ave. to N/O Primrose Ave.
60	Placentia Ave.	Macadamia Ln. to Bastanchury Rd.
61	Placentia Ave.	Bastanchury Rd. to Rolling Hills Dr.
62	Richfield Rd.	Southern City Limit to Orangethorpe Ave.
63	Richfield Rd.	Orangethorpe Ave. to Northern City Limit
64	Rose Dr.	Orangethorpe Ave. to Alta Vista St.
65	Rose Dr.	Alta Vista St. to Palm Dr.
66	Rose Dr.	Palm Dr. to N/O Yorba Linda Blvd.
67	Rose Dr.	S/O Golden Ave. to Northern City Limit
68	Santa Fe Ave.	Placentia Ave. to Melrose St.
69	Santa Fe Ave.	Melrose St. to Bradford Ave.
70	Valencia Ave.	Palm Dr. to Yorba Linda Blvd.
71	Valencia Ave.	Yorba Linda Blvd. to Bastanchury Rd.
72	Valencia Ave.	Bastanchury Rd. to Northern City Limit
73	Van Buren St.	Southern City Limit to Orangethorpe Ave.
74	Van Buren St.	Orangethorpe Ave. to Northern City Limit
75	Yorba Linda Blvd.	Bradford Ave. to Kreamer Blvd.
76	Yorba Linda Blvd.	Kraemer Blvd. to Valencia Ave.
77	Yorba Linda Blvd.	Valencia Ave. to Rose Dr.
78	Yorba Linda Blvd.	Rose Dr. to Eastern City Limit

**CITY OF PLACENTIA  
CITYWIDE TRAFFIC COUNTS - 2016**

ID #	STREET	SEGMENT	TOTAL TRAFFIC COUNT	NORTHBOUND		SOUTHBOUND		EASTBOUND		WESTBOUND	
				AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK
1	All America Way	Alta Vista St. to Chapman Ave.	1,403	8:00	4:45	7:30	1:45				
2	Alta Vista St.	Angelina Dr. to Kraemer Blvd.	4,080					7:30	3:00	7:45	2:30
3	Alta Vista St.	Kraemer Blvd. to Rose Dr.	14,617					7:15	3:00	7:15	5:15
4	Alta Vista St.	Rose Dr. to Van Buren St.	9,581					7:30	5:00	7:15	4:15
5	Angelina Dr.	Chapman Ave. to Alta Vista St.	3,543	7:30	3:00	7:30	2:45				
6	Bastanchury Rd.	Western City Limit to Kraemer Blvd.	24,886					7:00	4:15	7:00	4:15
7	Bastanchury Rd.	Kraemer Blvd. to Valencia Ave.	20,191					7:00	4:15	7:00	4:15
8	Bastanchury Rd.	Valencia Ave. to Eastern City Limit	16,601					7:30	5:00	7:30	4:45
9	Bradford Ave.	Santa Fe Ave. to Chapman Ave.	4,225	7:00	2:30	7:15	2:45				
10	Bradford Ave.	Chapman Ave. to Madison Ave.	9,316	7:15	6:00	7:15	4:00				
11	Bradford Ave.	Madison Ave. to Northern City Limit	11,341	7:15	4:30	7:15	5:45				
12	Buena Vista Ave.	Rose Dr. to Eastern City Limit	12,959					7:30	5:15	7:15	5:00
13	Central Ave.	Chapman Ave. to Alta Vista St.	3,185	7:15	4:45	7:15	12:45				
14	Chapman Ave.	Placentia Ave. to Bradford Ave.	21,509					7:15	5:00	7:15	4:30
15	Chapman Ave.	Bradford Ave. to Kraemer Blvd.	19,109					7:15	5:00	7:15	2:45
16	Chapman Ave.	Kraemer Blvd. to Orangethorpe Ave.	8,348					7:15	5:15	7:15	4:45
17	Crowther Ave.	Placentia Ave. to Melrose St.	5,175					11:00	12:00	7:45	4:30
18	Crowther Ave.	Melrose St. to Eastern City Limit	3,961					11:00	3:30	7:30	4:30
19	Golden Ave.	Kraemer Blvd. to Valencia Ave.	5,335					7:00	2:30	7:30	1:15
20	Golden Ave.	Valencia Ave. to Eastern City Limit	3,350					7:30	12:45	7:45	1:00
21	Highland Ave.	Orangethorpe Ave. to Northern City Limit	4,329	7:00	7:00	7:00	7:00				
22	Jefferson St.	Southern City Limit to Orangethorpe Ave.	5,236	11:00	4:30	7:15	2:30				
23	Jefferson St.	Orangethorpe Ave. to Alta Vista St.	4,790	11:00	4:30	7:00	0:15				
24	Jefferson St.	Alta Vista St. to Garten Dr.	1,927	8:00	5:45	6:45	6:00				
25	Kraemer Blvd.	Southern City Limit to Orangethorpe Ave.	23,261	7:15	4:30	7:00	2:30				
26	Kraemer Blvd.	Crowther Ave. to Chapman Ave.	21,466	7:15	4:45	7:15	4:30				
27	Kraemer Blvd.	Chapman Ave. to Madison Ave.	21,289	11:00	4:30	7:15	4:00				
28	Kraemer Blvd.	Madison Ave. to Yorba Linda Blvd.	24,396	7:00	4:15	7:00	4:30				
29	Kraemer Blvd.	Yorba Linda Blvd. to Bastanchury Rd.	21,626	7:15	4:30	7:15	4:15				
30	Kraemer Blvd.	Bastanchury Rd. to Northern City Limit	20,597	7:30	4:00	7:00	4:00				
31	La Jolla St.	Placentia Ave. to Melrose St.	5,763					7:15	2:30	7:30	2:45
32	La Jolla St.	Melrose St. to Eastern City Limit	4,886					5:15	1:45	7:45	3:45
33	Lakeview Ave.	Southern City Limit to Northern City Limit	7,246	6:30	4:15	11:00	4:00				
34	Linda Vista St.	Rose Dr. to Yorba Linda Blvd.	2,409	7:30	5:00	7:45	1:00				
35	Madison Ave.	Western City Limit to Bradford Ave.	6,166					7:15	5:00	7:15	6:15
36	Madison Ave.	Bradford Ave. to Kraemer Blvd.	8,562					7:00	2:30	7:00	5:45

**CITY OF PLACENTIA  
CITYWIDE TRAFFIC COUNTS - 2016**

ID #	STREET	SEGMENT	TOTAL TRAFFIC COUNT	AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK
37	McCormack Ln.	Yorba Linda Blvd. to Northern City Limit	2,181	11:00	5:15	7:30	3:00				
38	McCormack Ln.	Shadburn Ave. to Bastanchury Rd.	1,447	7:30	5:15	7:30	4:45				
39	McCormack Ln.	Bastanchury Rd. to Golden Ave.	833	7:30	12:45	7:30	12:45				
40	Melrose St.	Southern City Limit to Orangethorpe Ave.	15,337	7:15	3:45	7:15	2:15				
41	Melrose St.	Orangethorpe Ave. to Crowther Ave.	8,949	7:15	2:30	7:00	2:30				
42	Melrose St.	Crowther Ave. to Santa Fe Ave.	7,472	7:00	5:00	7:00	2:45				
43	Mira Loma Ave.	Van Buren St. to Ritchfield Rd.	4,963					7:45	4:15	7:30	3:15
44	Mira Loma Ave.	Ritchfield Rd. to Lakeview Ave.									
45	Morse Ave.	Kraemer Blvd. to Venice Ave.	2,827					7:00	12:30	7:00	12:45
46	Orangethorpe Ave.	Placentia Ave. to Melrose St.	23,648					7:15	2:00	7:30	4:15
47	Orangethorpe Ave.	Melrose St. to Kraemer Blvd.	17,418					7:30	5:00	7:15	4:15
48	Orangethorpe Ave.	City Limit W/O Chapman Ave. to Chapman Ave.	7,227					7:15	5:00	7:15	2:30
49	Orangethorpe Ave.	Chapman Ave. to Rose Dr.	13,217					7:15	4:15	7:00	4:45
50	Orangethorpe Ave.	Rose Dr. to Eastern City Limit	13,645					7:15	4:30	7:00	2:30
51	Orchard Dr.	Van Buren St. to Ritchfield Rd.	2,653					7:00	4:00	7:00	5:00
52	Orchard Dr.	Ritchfield Rd. to Highland Ave.	3,028					7:15	6:00	7:00	7:15
53	Orchard Dr.	Highland Ave. to Lakeview Ave.	2,373					7:15	7:00	7:00	7:15
54	Palm Dr.	Yorba Linda Blvd. to Valencia Ave.	8,284					7:30	4:45	7:15	4:30
55	Palm Dr.	Valencia Ave. to Rose Dr.	10,569					7:30	5:15	7:15	5:15
56	Placentia Ave.	Southern City Limit to Orangethorpe Ave.	11,356					7:00	2:45	6:45	2:45
57	Placentia Ave.	Orangethorpe Ave. to Crowther Ave.	17,221	7:00	4:30	6:45	3:30				
58	Placentia Ave.	Crowther Ave. to Chapman Ave.	17,545	11:00	4:00	6:45	1:45				
59	Placentia Ave.	Chapman Ave. to N/O Primrose Ave.	22,119	11:00	4:45	6:45	4:45				
60	Placentia Ave.	Macadamia Ln. to Bastanchury Rd.	20,136	11:00	5:00	6:45	4:15				
61	Placentia Ave.	Bastanchury Rd. to Rolling Hills Dr.	11,338	11:00	5:00	6:30	4:00				
62	Richfield Rd.	Southern City Limit to Orangethorpe Ave.	13,603	11:00	4:15	7:00	0:30				
63	Richfield Rd.	Orangethorpe Ave. to Northern City Limit	12,596	7:15	4:30	7:00	5:00				
64	Rose Dr.	Orangethorpe Ave. to Alta Vista St.	26,399	7:30	5:15	7:30	4:45				
65	Rose Dr.	Alta Vista St. to Palm Dr.	31,171	7:30	5:00	7:15	4:45				
66	Rose Dr.	Palm Dr. to N/O Yorba Linda Blvd.	22,484	7:30	5:50	7:30	4:45				
67	Rose Dr.	S/O Golden Ave. to Northern City Limit	23,730	7:15	4:15	6:45	4:30				
68	Santa Fe Ave.	Placentia Ave. to Melrose St.	3,413					7:15	5:30	7:15	5:00
69	Santa Fe Ave.	Melrose St. to Bradford Ave.	4,360					7:00	2:30	7:15	2:45
70	Valencia Ave.	Palm Dr. to Yorba Linda Blvd.	5,627	7:15	5:15	7:30	2:30				
71	Valencia Ave.	Yorba Linda Blvd. to Bastanchury Rd.	9,668	7:15	4:15	7:00	2:30				
72	Valencia Ave.	Bastanchury Rd. to Northern City Limit	8,180	7:30	4:45	7:00	4:45				
73	Van Buren St.	Southern City Limit to Orangethorpe Ave.	5,686	11:00	4:15	7:00	12:00				

**CITY OF PLACENTIA  
CITYWIDE TRAFFIC COUNTS - 2016**

<b>ID #</b>	<b>STREET</b>	<b>SEGMENT</b>	<b>TOTAL TRAFFIC COUNT</b>	<b>AM PEAK</b>	<b>PM PEAK</b>	<b>AM PEAK</b>	<b>PM PEAK</b>	<b>AM PEAK</b>	<b>PM PEAK</b>	<b>AM PEAK</b>	<b>PM PEAK</b>
74	Van Buren St.	Orangethorpe Ave. to Northern City Limit	7,210	7:15	4:45	7:15	4:45				
75	Yorba Linda Blvd.	Bradford Ave. to Kraemer Blvd.	33,927					7:00	4:45	7:15	4:30
76	Yorba Linda Blvd.	Kraemer Blvd. to Valencia Ave.	26,077					7:00	4:30	7:15	4:15
77	Yorba Linda Blvd.	Valencia Ave. to Rose Dr.	23,147					7:30	4:45	7:15	4:45
78	Yorba Linda Blvd.	Rose Dr. to Eastern City Limit	25,479					7:15	4:30	7:00	5:15



















# Counts Unlimited, Inc.

City of Placentia  
 Bradford Avenue  
 B/ Santa Fe Avenue - Chapman Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA009  
 Site Code: 222-16557

Start Time	20-Oct-16 Thu	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	23			3	34				
12:15		2	20			2	41				
12:30		2	19			1	22				
12:45		1	23	10	85	1	32	7	129	17	214
01:00		0	28			0	16				
01:15		3	21			1	30				
01:30		2	29			2	24				
01:45		1	31	6	109	0	33	3	103	9	212
02:00		1	34			0	31				
02:15		2	28			0	34				
02:30		1	49			0	30				
02:45		0	54	4	165	1	73	1	168	5	333
03:00		0	52			0	80				
03:15		0	45			0	36				
03:30		1	44			1	50				
03:45		0	47	1	188	1	60	2	226	3	414
04:00		2	38			4	50				
04:15		1	45			3	37				
04:30		1	41			5	34				
04:45		4	51	8	175	6	41	18	162	26	337
05:00		4	45			0	44				
05:15		7	55			6	46				
05:30		7	46			13	27				
05:45		3	37	21	183	3	36	22	153	43	336
06:00		5	57			11	60				
06:15		10	40			16	51				
06:30		45	36			31	36				
06:45		26	24	86	157	40	25	98	172	184	329
07:00		37	23			29	27				
07:15		73	26			35	22				
07:30		103	23			74	38				
07:45		53	14	266	86	98	16	236	103	502	189
08:00		25	17			35	20				
08:15		40	18			25	18				
08:30		19	15			19	18				
08:45		25	10	109	60	27	17	106	73	215	133
09:00		24	12			22	9				
09:15		14	14			19	13				
09:30		20	14			20	14				
09:45		19	16	77	56	18	13	79	49	156	105
10:00		22	9			17	12				
10:15		15	10			23	12				
10:30		21	11			15	11				
10:45		21	8	79	38	18	2	73	37	152	75
11:00		16	3			20	5				
11:15		30	7			20	2				
11:30		25	3			35	3				
11:45		25	5	96	18	36	1	111	11	207	29
<b>Total</b>		<b>763</b>	<b>1320</b>	<b>763</b>	<b>1320</b>	<b>756</b>	<b>1386</b>	<b>756</b>	<b>1386</b>	<b>1519</b>	<b>2706</b>
<b>Combined Total</b>		<b>2083</b>		<b>2083</b>		<b>2142</b>		<b>2142</b>		<b>4225</b>	
AM Peak	-	07:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	266	-	-	-	242	-	-	-	-	-
P.H.F.	-	0.646	-	-	-	0.617	-	-	-	-	-
PM Peak	-	-	02:30	-	-	-	02:45	-	-	-	-
Vol.	-	-	200	-	-	-	239	-	-	-	-
P.H.F.	-	-	0.926	-	-	-	0.747	-	-	-	-
Percentage		36.6%	63.4%			35.3%	64.7%				
ADT/AADT		ADT 4,225		AADT 4,225							

















# Counts Unlimited, Inc.

City of Placentia  
 Crowther Avenue  
 B/ Placentia Avenue - Melrose Street  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA017  
 Site Code: 222-16557

Start Time	20-Oct-16 Thu	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	57			1	48				
12:15		1	57			4	55				
12:30		1	57			0	52				
12:45		1	69	4	240	0	38	5	193	9	433
01:00		1	48			0	37				
01:15		2	56			0	43				
01:30		0	61			2	49				
01:45		0	41	3	206	0	53	2	182	5	388
02:00		0	40			0	40				
02:15		1	55			0	39				
02:30		1	49			0	73				
02:45		0	56	2	200	1	55	1	207	3	407
03:00		2	67			1	72				
03:15		2	60			3	53				
03:30		4	44			1	65				
03:45		6	42	14	213	8	76	13	266	27	479
04:00		6	46			0	54				
04:15		4	47			3	48				
04:30		2	43			9	68				
04:45		15	54	27	190	6	68	18	238	45	428
05:00		10	62			5	55				
05:15		11	49			3	78				
05:30		10	45			7	57				
05:45		25	35	56	191	12	41	27	231	83	422
06:00		15	29			7	56				
06:15		12	33			14	26				
06:30		23	27			26	28				
06:45		35	28	85	117	25	31	72	141	157	258
07:00		40	31			38	17				
07:15		39	31			39	13				
07:30		45	20			35	24				
07:45		43	27	167	109	76	22	188	76	355	185
08:00		31	13			49	14				
08:15		36	22			55	6				
08:30		45	16			50	11				
08:45		42	18	154	69	43	5	197	36	351	105
09:00		43	8			34	4				
09:15		37	9			28	5				
09:30		41	9			51	11				
09:45		48	2	169	28	37	3	150	23	319	51
10:00		21	10			50	3				
10:15		37	4			34	2				
10:30		48	3			32	5				
10:45		34	3	140	20	46	3	162	13	302	33
11:00		43	4			25	2				
11:15		38	3			29	1				
11:30		38	2			46	0				
11:45		54	1	173	10	41	3	141	6	314	16
<b>Total</b>		<b>994</b>	<b>1593</b>	<b>994</b>	<b>1593</b>	<b>976</b>	<b>1612</b>	<b>976</b>	<b>1612</b>	<b>1970</b>	<b>3205</b>
<b>Combined Total</b>			<b>2587</b>		<b>2587</b>		<b>2588</b>		<b>2588</b>		<b>5175</b>
AM Peak	-	11:00	-	-	-	07:45	-	-	-	-	-
Vol.	-	173	-	-	-	230	-	-	-	-	-
P.H.F.	-	0.801	-	-	-	0.757	-	-	-	-	-
PM Peak	-	-	12:00	-	-	-	04:30	-	-	-	-
Vol.	-	-	240	-	-	-	269	-	-	-	-
P.H.F.	-	-	0.870	-	-	-	0.862	-	-	-	-
Percentage			38.4%		61.6%		37.7%		62.3%		
ADT/AADT			ADT 5,175		AADT 5,175						



# Counts Unlimited, Inc.

City of Placentia  
 Golden Avenue  
 B/ Kraemer Boulevard - Valencia Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA019  
 Site Code: 222-16557

Start Time	19-Oct-16 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	30			3	33				
12:15		1	32			0	41				
12:30		1	54			6	40				
12:45		0	51	4	167	0	32	9	146	13	313
01:00		1	61			0	27				
01:15		2	39			2	112				
01:30		4	29			2	46				
01:45		0	41	7	170	1	54	5	239	12	409
02:00		0	35			1	41				
02:15		0	33			1	56				
02:30		0	77			0	51				
02:45		1	51	1	196	0	42	2	190	3	386
03:00		0	38			2	51				
03:15		0	56			0	38				
03:30		0	27			1	52				
03:45		2	40	2	161	3	38	6	179	8	340
04:00		0	43			4	40				
04:15		1	52			3	33				
04:30		3	49			6	52				
04:45		1	47	5	191	6	58	19	183	24	374
05:00		3	54			5	46				
05:15		5	56			13	54				
05:30		3	55			25	47				
05:45		7	50	18	215	23	51	66	198	84	413
06:00		11	56			18	47				
06:15		13	47			28	44				
06:30		25	40			52	42				
06:45		11	45	60	188	43	23	141	156	201	344
07:00		25	30			51	31				
07:15		61	21			77	23				
07:30		139	33			113	33				
07:45		34	20	259	104	104	22	345	109	604	213
08:00		24	32			61	21				
08:15		39	22			104	17				
08:30		43	22			59	19				
08:45		34	19	140	95	53	31	277	88	417	183
09:00		32	20			35	15				
09:15		29	22			52	5				
09:30		21	17			45	13				
09:45		18	11	100	70	34	5	166	38	266	108
10:00		27	6			47	8				
10:15		25	15			41	3				
10:30		21	13			42	10				
10:45		21	8	94	42	34	5	164	26	258	68
11:00		30	5			24	5				
11:15		26	3			48	0				
11:30		25	1			49	3				
11:45		36	3	117	12	36	0	157	8	274	20
<b>Total</b>		<b>807</b>	<b>1611</b>	<b>807</b>	<b>1611</b>	<b>1357</b>	<b>1560</b>	<b>1357</b>	<b>1560</b>	<b>2164</b>	<b>3171</b>
<b>Combined Total</b>		<b>2418</b>		<b>2418</b>		<b>2917</b>		<b>2917</b>		<b>5335</b>	
AM Peak	-	07:00	-	-	-	07:30	-	-	-	-	-
Vol.	-	259	-	-	-	382	-	-	-	-	-
P.H.F.	-	0.466	-	-	-	0.845	-	-	-	-	-
PM Peak	-	-	02:30	-	-	-	01:15	-	-	-	-
Vol.	-	-	222	-	-	-	253	-	-	-	-
P.H.F.	-	-	0.721	-	-	-	0.565	-	-	-	-
Percentage		33.4%	66.6%			46.5%	53.5%				
ADT/AADT		ADT 5,335		AADT 5,335							

# Counts Unlimited, Inc.

City of Placentia  
 Golden Avenue  
 B/ Valencia Avenue - Eastern City Limits  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA020  
 Site Code: 222-16557

Start Time	19-Oct-16 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	25			3	21				
12:15		1	16			4	24				
12:30		2	19			0	18				
12:45		3	34	8	94	0	18	7	81	15	175
01:00		2	36			0	29				
01:15		2	54			0	42				
01:30		0	47			0	58				
01:45		4	25	8	162	0	70	0	199	8	361
02:00		0	29			1	28				
02:15		0	33			0	23				
02:30		1	27			0	23				
02:45		0	31	1	120	1	27	2	101	3	221
03:00		0	15			1	30				
03:15		1	35			1	28				
03:30		1	27			0	17				
03:45		1	30	3	107	1	30	3	105	6	212
04:00		0	23			2	24				
04:15		2	25			0	24				
04:30		1	31			1	29				
04:45		3	44	6	123	2	23	5	100	11	223
05:00		2	30			1	35				
05:15		5	33			1	28				
05:30		4	28			0	28				
05:45		7	46	18	137	5	30	7	121	25	258
06:00		4	38			3	26				
06:15		5	38			4	18				
06:30		10	29			3	23				
06:45		23	24	42	129	14	26	24	93	66	222
07:00		22	18			8	19				
07:15		34	30			13	20				
07:30		71	14			18	11				
07:45		82	23	209	85	59	10	98	60	307	145
08:00		25	22			88	19				
08:15		40	20			24	15				
08:30		44	11			20	16				
08:45		35	14	144	67	19	19	151	69	295	136
09:00		30	13			19	12				
09:15		20	10			22	14				
09:30		29	11			33	8				
09:45		23	8	102	42	15	5	89	39	191	81
10:00		25	6			17	5				
10:15		21	5			16	2				
10:30		21	1			12	5				
10:45		26	2	93	14	15	12	60	24	153	38
11:00		23	4			15	2				
11:15		18	3			19	1				
11:30		32	4			22	4				
11:45		29	3	102	14	17	2	73	9	175	23
<b>Total</b>		<b>736</b>	<b>1094</b>	<b>736</b>	<b>1094</b>	<b>519</b>	<b>1001</b>	<b>519</b>	<b>1001</b>	<b>1255</b>	<b>2095</b>
<b>Combined Total</b>		<b>1830</b>		<b>1830</b>		<b>1520</b>		<b>1520</b>		<b>3350</b>	
AM Peak	-	07:30	-	-	-	07:45	-	-	-	-	-
Vol.	-	218	-	-	-	191	-	-	-	-	-
P.H.F.	-	0.665	-	-	-	0.543	-	-	-	-	-
PM Peak	-	-	00:45	-	-	-	01:00	-	-	-	-
Vol.	-	-	171	-	-	-	199	-	-	-	-
P.H.F.	-	-	0.792	-	-	-	0.711	-	-	-	-
Percentage		40.2%	59.8%			34.1%	65.9%				
ADT/AADT		ADT 3,350		AADT 3,350							



# Counts Unlimited, Inc.

City of Placentia  
 Highland Avenue  
 B/ Orangethorpe Avenue - Northern City Limits  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA021  
 Site Code: 222-16557

Start Time	20-Oct-16 Thu	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	13			3	25				
12:15		3	16			3	46				
12:30		2	24			0	30				
12:45		5	20	12	73	3	30	9	131	21	204
01:00		1	8			0	17				
01:15		1	16			3	31				
01:30		1	17			3	26				
01:45		0	16	3	57	1	35	7	109	10	166
02:00		2	23			2	46				
02:15		0	25			0	32				
02:30		2	27			0	30				
02:45		0	23	4	98	0	29	2	137	6	235
03:00		0	27			3	26				
03:15		1	24			1	30				
03:30		0	21			2	26				
03:45		0	24	1	96	1	30	7	112	8	208
04:00		2	23			5	44				
04:15		2	29			2	30				
04:30		0	28			10	29				
04:45		4	24	8	104	6	30	23	133	31	237
05:00		2	26			10	30				
05:15		0	33			14	27				
05:30		5	25			23	42				
05:45		3	32	10	116	19	35	66	134	76	250
06:00		3	34			27	36				
06:15		5	22			37	39				
06:30		6	23			52	40				
06:45		6	54	20	133	47	41	163	156	183	289
07:00		22	71			57	67				
07:15		19	88			79	52				
07:30		19	72			94	58				
07:45		32	55	92	286	69	43	299	220	391	506
08:00		14	45			46	26				
08:15		15	31			40	35				
08:30		11	40			36	20				
08:45		12	41	52	157	36	21	158	102	210	259
09:00		13	39			43	26				
09:15		16	38			32	20				
09:30		13	31			35	37				
09:45		11	32	53	140	32	42	142	125	195	265
10:00		18	17			41	11				
10:15		16	23			30	12				
10:30		19	28			25	11				
10:45		11	19	64	87	21	15	117	49	181	136
11:00		20	15			25	14				
11:15		18	18			36	5				
11:30		11	15			24	10				
11:45		14	16	63	64	20	1	105	30	168	94
<b>Total</b>		<b>382</b>	<b>1411</b>	<b>382</b>	<b>1411</b>	<b>1098</b>	<b>1438</b>	<b>1098</b>	<b>1438</b>	<b>1480</b>	<b>2849</b>
<b>Combined Total</b>		<b>1793</b>		<b>1793</b>		<b>2536</b>		<b>2536</b>		<b>4329</b>	
AM Peak	-	07:00	-	-	-	07:00	-	-	-	-	-
Vol.	-	92	-	-	-	299	-	-	-	-	-
P.H.F.	-	0.719	-	-	-	0.795	-	-	-	-	-
PM Peak	-	-	07:00	-	-	-	07:00	-	-	-	-
Vol.	-	-	286	-	-	-	220	-	-	-	-
P.H.F.	-	-	0.813	-	-	-	0.821	-	-	-	-
Percentage		21.3%	78.7%			43.3%	56.7%				
ADT/AADT		ADT 4,329		AADT 4,329							

# Counts Unlimited, Inc.

City of Placentia  
 Jefferson Street  
 B/ Southern City Limits - Orangethorpe Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA022  
 Site Code: 222-16557

Start Time	02-Nov-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	48			2	39				
12:15		6	38			3	40				
12:30		4	38			0	39				
12:45		3	36	17	160	1	32	6	150	23	310
01:00		0	47			3	31				
01:15		1	27			1	29				
01:30		4	27			0	36				
01:45		0	34	5	135	1	24	5	120	10	255
02:00		1	40			1	44				
02:15		0	49			2	31				
02:30		1	28			3	56				
02:45		2	31	4	148	3	52	9	183	13	331
03:00		3	74			7	40				
03:15		2	60			3	36				
03:30		4	57			7	33				
03:45		3	73	12	264	4	31	21	140	33	404
04:00		2	76			13	27				
04:15		3	54			16	25				
04:30		11	89			14	26				
04:45		7	102	23	321	18	24	61	102	84	423
05:00		7	100			20	23				
05:15		17	111			32	23				
05:30		11	82			42	33				
05:45		12	73	47	366	34	22	128	101	175	467
06:00		16	65			54	28				
06:15		14	47			51	22				
06:30		26	66			90	28				
06:45		21	39	77	217	58	27	253	105	330	322
07:00		19	43			52	13				
07:15		35	34			70	18				
07:30		33	29			73	11				
07:45		24	27	111	133	66	9	261	51	372	184
08:00		37	33			62	10				
08:15		28	23			52	12				
08:30		17	30			50	11				
08:45		15	30	97	116	47	10	211	43	308	159
09:00		31	17			39	6				
09:15		13	20			39	3				
09:30		24	21			38	12				
09:45		27	29	95	87	19	16	135	37	230	124
10:00		22	22			28	10				
10:15		28	26			42	8				
10:30		23	20			36	8				
10:45		31	15	104	83	41	6	147	32	251	115
11:00		26	9			35	8				
11:15		34	5			35	4				
11:30		36	6			28	2				
11:45		41	3	137	23	37	4	135	18	272	41
<b>Total</b>		<b>729</b>	<b>2053</b>	<b>729</b>	<b>2053</b>	<b>1372</b>	<b>1082</b>	<b>1372</b>	<b>1082</b>	<b>2101</b>	<b>3135</b>
<b>Combined Total</b>			<b>2782</b>		<b>2782</b>		<b>2454</b>		<b>2454</b>		<b>5236</b>
AM Peak	-	11:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	137	-	-	-	271	-	-	-	-	-
P.H.F.	-	0.835	-	-	-	0.928	-	-	-	-	-
PM Peak	-	-	04:30	-	-	-	02:30	-	-	-	-
Vol.	-	-	402	-	-	-	184	-	-	-	-
P.H.F.	-	-	0.905	-	-	-	0.821	-	-	-	-
Percentage			26.2%	73.8%		55.9%	44.1%				
ADT/AADT			ADT 5,236	AADT 5,236							















# Counts Unlimited, Inc.

City of Placentia  
 Kraemer Boulevard  
 B/ Yorba Linda Boulevard - Bastanchury Road  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA029  
 Site Code: 222-16557

Start Time	02-Nov-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	136			5	176				
12:15		8	161			11	169				
12:30		4	169			6	156				
12:45		5	155	27	621	2	190	24	691	51	1312
01:00		4	181			6	141				
01:15		1	191			4	217				
01:30		2	141			2	195				
01:45		3	186	10	699	2	172	14	725	24	1424
02:00		0	174			3	192				
02:15		2	196			4	153				
02:30		0	170			1	276				
02:45		1	200	3	740	2	219	10	840	13	1580
03:00		1	200			7	202				
03:15		2	185			4	186				
03:30		2	185			6	243				
03:45		1	216	6	786	4	195	21	826	27	1612
04:00		4	201			6	238				
04:15		2	216			10	248				
04:30		7	224			15	263				
04:45		14	247	27	888	20	253	51	1002	78	1890
05:00		10	227			12	285				
05:15		15	233			31	245				
05:30		19	219			41	232				
05:45		43	191	87	870	95	243	179	1005	266	1875
06:00		38	212			124	193				
06:15		57	180			143	193				
06:30		90	163			187	197				
06:45		99	158	284	713	201	137	655	720	939	1433
07:00		74	120			244	151				
07:15		167	92			268	123				
07:30		252	91			346	108				
07:45		232	72	725	375	280	65	1138	447	1863	822
08:00		162	87			258	99				
08:15		151	70			232	109				
08:30		184	80			271	86				
08:45		120	89	617	326	203	87	964	381	1581	707
09:00		132	112			167	87				
09:15		103	105			137	68				
09:30		137	57			153	95				
09:45		96	40	468	314	154	50	611	300	1079	614
10:00		107	35			147	36				
10:15		96	38			128	35				
10:30		123	26			140	23				
10:45		135	10	461	109	126	27	541	121	1002	230
11:00		113	18			117	22				
11:15		130	12			159	11				
11:30		140	6			166	15				
11:45		117	13	500	49	153	12	595	60	1095	109
<b>Total</b>		<b>3215</b>	<b>6490</b>	<b>3215</b>	<b>6490</b>	<b>4803</b>	<b>7118</b>	<b>4803</b>	<b>7118</b>	<b>8018</b>	<b>13608</b>
<b>Combined Total</b>		<b>9705</b>		<b>9705</b>		<b>11921</b>		<b>11921</b>		<b>21626</b>	
AM Peak	-	07:15	-	-	-	07:15	-	-	-	-	-
Vol.	-	813	-	-	-	1152	-	-	-	-	-
P.H.F.	-	0.807	-	-	-	0.832	-	-	-	-	-
PM Peak	-	-	04:30	-	-	-	04:15	-	-	-	-
Vol.	-	-	931	-	-	-	1049	-	-	-	-
P.H.F.	-	-	0.942	-	-	-	0.920	-	-	-	-
Percentage		33.1%	66.9%			40.3%	59.7%				
ADT/AADT		ADT 21,626		AADT 21,626							



# Counts Unlimited, Inc.

City of Placentia  
 La Jolla Street  
 B/ Placentia Avenue - Melrose Street  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA031  
 Site Code: 222-16557

Start Time	20-Oct-16 Thu	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	26			3	45				
12:15		0	38			4	40				
12:30		1	39			5	31				
12:45		1	42	4	145	8	31	20	147	24	292
01:00		3	19			5	38				
01:15		3	34			5	25				
01:30		0	45			8	38				
01:45		2	43	8	141	6	50	24	151	32	292
02:00		1	34			5	51				
02:15		0	45			0	54				
02:30		1	68			0	79				
02:45		4	61	6	208	2	102	7	286	13	494
03:00		0	51			0	112				
03:15		5	60			1	86				
03:30		4	43			3	96				
03:45		14	33	23	187	5	88	9	382	32	569
04:00		3	36			6	82				
04:15		5	50			2	68				
04:30		12	24			6	109				
04:45		30	35	50	145	8	69	22	328	72	473
05:00		18	36			9	92				
05:15		32	38			8	78				
05:30		49	34			23	68				
05:45		49	52	148	160	17	80	57	318	205	478
06:00		33	28			22	53				
06:15		33	32			14	43				
06:30		47	31			25	37				
06:45		56	23	169	114	26	40	87	173	256	287
07:00		54	23			22	32				
07:15		63	18			27	38				
07:30		110	15			49	31				
07:45		98	12	325	68	65	29	163	130	488	198
08:00		119	16			86	26				
08:15		58	11			68	26				
08:30		39	17			22	27				
08:45		41	7	257	51	24	23	200	102	457	153
09:00		20	7			25	14				
09:15		35	10			16	23				
09:30		23	13			28	20				
09:45		31	11	109	41	22	22	91	79	200	120
10:00		40	13			33	16				
10:15		18	11			33	11				
10:30		18	12			25	12				
10:45		19	12	95	48	23	22	114	61	209	109
11:00		30	3			25	15				
11:15		32	7			21	6				
11:30		34	7			34	11				
11:45		38	4	134	21	37	6	117	38	251	59
<b>Total</b>		<b>1328</b>	<b>1329</b>	<b>1328</b>	<b>1329</b>	<b>911</b>	<b>2195</b>	<b>911</b>	<b>2195</b>	<b>2239</b>	<b>3524</b>
<b>Combined Total</b>		<b>2657</b>		<b>2657</b>		<b>3106</b>		<b>3106</b>		<b>5763</b>	
AM Peak		07:15				07:30					
Vol.		390				268					
P.H.F.		0.819				0.779					
PM Peak			02:30				02:45				
Vol.			240				396				
P.H.F.			0.882				0.884				
Percentage		50.0%	50.0%			29.3%	70.7%				
ADT/AADT		ADT 5,763		AADT 5,763							



# Counts Unlimited, Inc.

City of Placentia  
 Lakeview Avenue  
 B/ Southern City Limits - Northern City Limits  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA033  
 Site Code: 222-16557

Start Time	02-Nov-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	53			2	76				
12:15		1	59			6	67				
12:30		0	76			1	67				
12:45		1	77	3	265	4	59	13	269	16	534
01:00		1	72			3	65				
01:15		0	65			0	75				
01:30		0	60			5	66				
01:45		0	51	1	248	5	82	13	288	14	536
02:00		1	64			2	74				
02:15		0	93			3	123				
02:30		0	66			0	80				
02:45		1	57	2	280	0	86	5	363	7	643
03:00		0	60			0	67				
03:15		0	69			1	141				
03:30		6	55			3	72				
03:45		4	78	10	262	3	115	7	395	17	657
04:00		5	63			6	<b>88</b>				
04:15		4	<b>91</b>			7	<b>133</b>				
04:30		6	<b>90</b>			7	<b>116</b>				
04:45		11	<b>97</b>	26	341	15	<b>166</b>	35	503	61	844
05:00		18	<b>79</b>			29	85				
05:15		9	55			23	103				
05:30		23	50			26	68				
05:45		24	68	74	252	41	49	119	305	193	557
06:00		12	57			49	60				
06:15		35	63			40	70				
06:30		<b>78</b>	48			38	43				
06:45		<b>44</b>	29	169	197	55	50	182	223	351	420
07:00		<b>50</b>	29			67	27				
07:15		<b>39</b>	30			74	37				
07:30		32	23			72	16				
07:45		24	34	145	116	56	13	269	93	414	209
08:00		23	19			61	16				
08:15		19	17			55	17				
08:30		14	13			53	19				
08:45		12	20	68	69	43	14	212	66	280	135
09:00		22	14			48	18				
09:15		31	10			42	10				
09:30		39	7			42	22				
09:45		19	13	111	44	53	5	185	55	296	99
10:00		47	11			67	12				
10:15		23	3			63	13				
10:30		37	4			64	8				
10:45		51	2	158	20	59	9	253	42	411	62
11:00		34	6			<b>66</b>	3				
11:15		35	6			<b>67</b>	1				
11:30		51	4			<b>57</b>	3				
11:45		51	1	171	17	<b>103</b>	2	293	9	464	26
<b>Total</b>		<b>938</b>	<b>2111</b>	<b>938</b>	<b>2111</b>	<b>1586</b>	<b>2611</b>	<b>1586</b>	<b>2611</b>	<b>2524</b>	<b>4722</b>
<b>Combined Total</b>			<b>3049</b>		<b>3049</b>		<b>4197</b>		<b>4197</b>		<b>7246</b>
AM Peak	-	06:30	-	-	-	11:00	-	-	-	-	-
Vol.	-	211	-	-	-	293	-	-	-	-	-
P.H.F.	-	0.676	-	-	-	0.711	-	-	-	-	-
PM Peak	-	-	04:15	-	-	-	04:00	-	-	-	-
Vol.	-	-	357	-	-	-	503	-	-	-	-
P.H.F.	-	-	0.920	-	-	-	0.758	-	-	-	-
Percentage			30.8%	69.2%			37.8%	62.2%			
ADT/AADT			ADT 7,246	AADT 7,246							



# Counts Unlimited, Inc.

City of Placentia  
 Madison Avenue  
 B/ Western City Limits - Bradford Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA035  
 Site Code: 222-16557

Start Time	02-Nov-16 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		9	43			4	28				
12:15		5	36			1	45				
12:30		8	36			1	46				
12:45		7	41	29	156	5	47	11	166	40	322
01:00		1	55			5	34				
01:15		5	56			2	36				
01:30		4	45			1	31				
01:45		0	43	10	199	1	48	9	149	19	348
02:00		1	37			0	46				
02:15		4	42			1	38				
02:30		2	49			0	40				
02:45		0	73	7	201	2	67	3	191	10	392
03:00		1	68			2	62				
03:15		1	53			1	53				
03:30		4	58			5	64				
03:45		2	60	8	239	4	53	12	232	20	471
04:00		3	50			4	50				
04:15		6	54			7	53				
04:30		6	66			5	51				
04:45		4	55	19	225	8	51	24	205	43	430
05:00		3	70			8	52				
05:15		9	71			13	60				
05:30		10	68			19	55				
05:45		12	65	34	274	23	49	63	216	97	490
06:00		14	70			22	51				
06:15		18	57			22	67				
06:30		25	66			41	61				
06:45		37	68	94	261	38	66	123	245	217	506
07:00		32	52			36	55				
07:15		68	58			62	32				
07:30		96	33			87	42				
07:45		93	36	289	179	109	23	294	152	583	331
08:00		35	39			45	36				
08:15		37	38			47	32				
08:30		45	35			56	28				
08:45		38	29	155	141	35	21	183	117	338	258
09:00		34	40			36	46				
09:15		40	36			33	24				
09:30		19	22			49	21				
09:45		34	19	127	117	27	20	145	111	272	228
10:00		29	23			32	17				
10:15		26	22			30	16				
10:30		32	13			37	12				
10:45		32	11	119	69	33	9	132	54	251	123
11:00		31	11			35	3				
11:15		41	18			38	11				
11:30		30	7			54	8				
11:45		33	8	135	44	44	5	171	27	306	71
<b>Total</b>		<b>1026</b>	<b>2105</b>	<b>1026</b>	<b>2105</b>	<b>1170</b>	<b>1865</b>	<b>1170</b>	<b>1865</b>	<b>2196</b>	<b>3970</b>
<b>Combined Total</b>		<b>3131</b>		<b>3131</b>		<b>3035</b>		<b>3035</b>		<b>6166</b>	
AM Peak	-	07:15	-	-	-	07:15	-	-	-	-	-
Vol.	-	292	-	-	-	303	-	-	-	-	-
P.H.F.	-	0.760	-	-	-	0.695	-	-	-	-	-
PM Peak	-	-	05:00	-	-	-	06:15	-	-	-	-
Vol.	-	-	274	-	-	-	249	-	-	-	-
P.H.F.	-	-	0.965	-	-	-	0.929	-	-	-	-
Percentage		32.8%	67.2%			38.6%	61.4%				
ADT/AADT		ADT 6,166		AADT 6,166							









# Counts Unlimited, Inc.

City of Placentia  
McCormack Lane  
B/ Bastanchury Road - Golden Avenue  
24 Hour Directional Volume Count

PO Box 1178  
Corona, CA 92878  
Phone: 951-268-6268  
Email: counts@countsunlimited.com

PLA039  
Site Code: 222-16557

Start Time	19-Oct-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	5			0	5				
12:15		0	6			0	5				
12:30		0	4			0	9				
12:45		1	6	1	21	1	12	1	31	2	52
01:00		1	14			0	8				
01:15		0	16			0	18				
01:30		1	8			0	19				
01:45		1	6	3	44	0	5	0	50	3	94
02:00		0	11			0	5				
02:15		1	6			0	3				
02:30		0	5			0	7				
02:45		0	4	1	26	0	8	0	23	1	49
03:00		0	6			1	6				
03:15		0	9			1	5				
03:30		1	3			0	2				
03:45		0	6	1	24	0	8	2	21	3	45
04:00		0	4			2	6				
04:15		0	7			0	8				
04:30		0	8			1	4				
04:45		2	9	2	28	1	6	4	24	6	52
05:00		0	8			0	6				
05:15		0	5			0	7				
05:30		2	13			2	8				
05:45		1	6	3	32	2	4	4	25	7	57
06:00		1	6			0	8				
06:15		2	5			4	7				
06:30		2	7			3	6				
06:45		5	4	10	22	4	5	11	26	21	48
07:00		2	6			1	4				
07:15		6	9			1	4				
07:30		17	5			20	5				
07:45		24	12	49	32	29	7	51	20	100	52
08:00		4	5			6	7				
08:15		12	6			7	2				
08:30		11	4			0	4				
08:45		7	6	34	21	4	3	17	16	51	37
09:00		5	1			4	4				
09:15		3	2			6	3				
09:30		6	5			7	1				
09:45		5	5	19	13	4	1	21	9	40	22
10:00		6	3			0	1				
10:15		10	1			4	1				
10:30		4	0			2	1				
10:45		6	1	26	5	2	0	8	3	34	8
11:00		8	0			7	0				
11:15		5	1			5	2				
11:30		4	0			6	0				
11:45		8	0	25	1	2	1	20	3	45	4
<b>Total</b>		<b>174</b>	<b>269</b>	<b>174</b>	<b>269</b>	<b>139</b>	<b>251</b>	<b>139</b>	<b>251</b>	<b>313</b>	<b>520</b>
<b>Combined Total</b>		<b>443</b>		<b>443</b>		<b>390</b>		<b>390</b>		<b>833</b>	
AM Peak	-	07:30	-	-	-	07:30	-	-	-	-	-
Vol.	-	57	-	-	-	62	-	-	-	-	-
P.H.F.	-	0.594	-	-	-	0.534	-	-	-	-	-
PM Peak	-	-	00:45	-	-	-	00:45	-	-	-	-
Vol.	-	-	44	-	-	-	57	-	-	-	-
P.H.F.	-	-	0.688	-	-	-	0.750	-	-	-	-
Percentage		39.3%	60.7%			35.6%	64.4%				
ADT/AADT		ADT 833		AADT 833							





# Counts Unlimited, Inc.

City of Placentia  
 Melrose Street  
 B/ Crowther Avenue - Santa Fe Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA042  
 Site Code: 222-16557

Start Time	20-Oct-16 Thu	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	48			4	67				
12:15		4	31			4	64				
12:30		6	33			4	63				
12:45		0	41	17	153	3	65	15	259	32	412
01:00		3	34			3	66				
01:15		3	37			2	65				
01:30		6	47			5	54				
01:45		2	40	14	158	0	44	10	229	24	387
02:00		1	52			1	59				
02:15		2	45			0	60				
02:30		1	96			0	71				
02:45		0	84	4	277	1	110	2	300	6	577
03:00		2	88			1	120				
03:15		1	71			4	80				
03:30		2	82			1	86				
03:45		1	77	6	318	10	87	16	373	22	691
04:00		5	112			6	76				
04:15		1	67			6	60				
04:30		2	88			14	59				
04:45		1	76	9	343	16	51	42	246	51	589
05:00		5	110			14	54				
05:15		6	108			28	70				
05:30		9	85			41	55				
05:45		5	82	25	385	47	65	130	244	155	629
06:00		12	71			32	78				
06:15		13	72			46	58				
06:30		43	48			88	58				
06:45		39	40	107	231	100	50	266	244	373	475
07:00		52	41			89	32				
07:15		89	36			95	42				
07:30		143	26			160	43				
07:45		64	19	348	122	188	32	532	149	880	271
08:00		50	23			84	26				
08:15		55	25			62	29				
08:30		29	25			63	38				
08:45		31	16	165	89	58	25	267	118	432	207
09:00		29	21			41	18				
09:15		21	17			40	18				
09:30		24	26			42	37				
09:45		35	12	109	76	38	20	161	93	270	169
10:00		27	28			45	17				
10:15		31	15			53	10				
10:30		31	18			42	15				
10:45		33	9	122	70	35	15	175	57	297	127
11:00		36	11			43	3				
11:15		36	11			34	4				
11:30		40	2			68	6				
11:45		34	9	146	33	55	4	200	17	346	50
<b>Total</b>		<b>1072</b>	<b>2255</b>	<b>1072</b>	<b>2255</b>	<b>1816</b>	<b>2329</b>	<b>1816</b>	<b>2329</b>	<b>2888</b>	<b>4584</b>
<b>Combined Total</b>		<b>3327</b>		<b>3327</b>		<b>4145</b>		<b>4145</b>		<b>7472</b>	
AM Peak	-	07:00	-	-	-	07:00	-	-	-	-	-
Vol.	-	348	-	-	-	532	-	-	-	-	-
P.H.F.	-	0.608	-	-	-	0.707	-	-	-	-	-
PM Peak	-	-	05:00	-	-	-	02:45	-	-	-	-
Vol.	-	-	385	-	-	-	396	-	-	-	-
P.H.F.	-	-	0.875	-	-	-	0.825	-	-	-	-
Percentage		32.2%	67.8%			43.8%	56.2%				
ADT/AADT		ADT 7,472		AADT 7,472							

# Counts Unlimited, Inc.

City of Placentia  
 Mira Loma Avenue  
 B/ Van Buren Street - Ritchfield Road  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA043  
 Site Code: 222-16557

Start Time	20-Oct-16 Thu	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	54			4	52				
12:15		2	42			3	40				
12:30		3	44			0	37				
12:45		2	46	11	186	1	61	8	190	19	376
01:00		2	34			1	37				
01:15		2	33			0	37				
01:30		3	33			3	37				
01:45		0	43	7	143	3	36	7	147	14	290
02:00		1	39			0	40				
02:15		0	39			1	42				
02:30		0	47			0	56				
02:45		1	50	2	175	0	40	1	178	3	353
03:00		1	38			1	58				
03:15		2	65			3	47				
03:30		2	42			0	101				
03:45		4	34	9	179	1	50	5	256	14	435
04:00		1	50			2	63				
04:15		9	52			6	41				
04:30		9	62			5	78				
04:45		14	58	33	222	8	47	21	229	54	451
05:00		11	69			14	78				
05:15		22	51			14	58				
05:30		40	41			15	53				
05:45		28	36	101	197	17	42	60	231	161	428
06:00		29	28			22	48				
06:15		35	21			20	29				
06:30		56	28			36	20				
06:45		63	21	183	98	34	22	112	119	295	217
07:00		47	8			25	10				
07:15		44	11			48	6				
07:30		48	14			57	9				
07:45		75	8	214	41	67	6	197	31	411	72
08:00		46	7			36	4				
08:15		48	9			54	12				
08:30		49	6			40	10				
08:45		46	10	189	32	31	4	161	30	350	62
09:00		40	11			43	5				
09:15		27	2			32	6				
09:30		36	9			24	6				
09:45		27	3	130	25	27	8	126	25	256	50
10:00		31	5			31	7				
10:15		28	4			27	7				
10:30		28	4			28	6				
10:45		32	9	119	22	34	1	120	21	239	43
11:00		39	3			38	9				
11:15		40	2			39	0				
11:30		58	1			44	4				
11:45		36	5	173	11	48	4	169	17	342	28
<b>Total</b>		<b>1171</b>	<b>1331</b>	<b>1171</b>	<b>1331</b>	<b>987</b>	<b>1474</b>	<b>987</b>	<b>1474</b>	<b>2158</b>	<b>2805</b>
<b>Combined Total</b>		<b>2502</b>		<b>2502</b>		<b>2461</b>		<b>2461</b>		<b>4963</b>	
AM Peak	-	07:45	-	-	-	07:30	-	-	-	-	-
Vol.	-	218	-	-	-	214	-	-	-	-	-
P.H.F.	-	0.727	-	-	-	0.799	-	-	-	-	-
PM Peak	-	-	04:15	-	-	-	03:15	-	-	-	-
Vol.	-	-	241	-	-	-	261	-	-	-	-
P.H.F.	-	-	0.873	-	-	-	0.646	-	-	-	-
Percentage		46.8%	53.2%			40.1%	59.9%				
ADT/AADT		ADT 4,963		AADT 4,963							





# Counts Unlimited, Inc.

City of Placentia  
 Orangethorpe Avenue  
 B/ Placentia Avenue - Melrose Street  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA046  
 Site Code: 222-16557

Start Time	02-Nov-16 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		17	175			11	198				
12:15		17	181			19	191				
12:30		9	194			10	196				
12:45		13	204	56	754	15	200	55	785	111	1539
01:00		19	212			5	193				
01:15		17	211			17	197				
01:30		10	178			16	194				
01:45		7	198	53	799	4	221	42	805	95	1604
02:00		9	<b>231</b>			6	185				
02:15		11	<b>257</b>			13	237				
02:30		19	<b>242</b>			17	197				
02:45		11	<b>256</b>	50	986	20	232	56	851	106	1837
03:00		10	224			11	150				
03:15		21	256			23	219				
03:30		16	212			39	240				
03:45		10	294	57	986	30	200	103	809	160	1795
04:00		32	195			47	193				
04:15		21	224			99	<b>217</b>				
04:30		42	246			108	<b>214</b>				
04:45		40	259	135	924	65	<b>287</b>	319	911	454	1835
05:00		52	254			87	<b>245</b>				
05:15		85	210			93	209				
05:30		64	193			112	214				
05:45		75	192	276	849	94	182	386	850	662	1699
06:00		99	161			114	178				
06:15		129	131			131	130				
06:30		159	140			151	106				
06:45		142	147	529	579	166	109	562	523	1091	1102
07:00		190	100			169	83				
07:15		<b>180</b>	95			203	111				
07:30		<b>199</b>	72			<b>277</b>	68				
07:45		<b>210</b>	98	779	365	<b>229</b>	53	878	315	1657	680
08:00		<b>194</b>	76			<b>240</b>	56				
08:15		171	79			<b>220</b>	60				
08:30		177	68			207	64				
08:45		179	90	721	313	173	53	840	233	1561	546
09:00		161	58			167	58				
09:15		159	67			192	48				
09:30		173	42			197	50				
09:45		125	46	618	213	168	49	724	205	1342	418
10:00		160	44			182	46				
10:15		153	58			151	49				
10:30		142	34			180	34				
10:45		161	44	616	180	200	44	713	173	1329	353
11:00		166	26			176	23				
11:15		189	36			182	16				
11:30		174	25			201	23				
11:45		198	27	727	114	195	15	754	77	1481	191
<b>Total</b>		<b>4617</b>	<b>7062</b>	<b>4617</b>	<b>7062</b>	<b>5432</b>	<b>6537</b>	<b>5432</b>	<b>6537</b>	<b>10049</b>	<b>13599</b>
<b>Combined Total</b>		<b>11679</b>		<b>11679</b>		<b>11969</b>		<b>11969</b>		<b>23648</b>	
AM Peak	-	07:15	-	-	-	07:30	-	-	-	-	-
Vol.	-	783	-	-	-	966	-	-	-	-	-
P.H.F.	-	0.932	-	-	-	0.872	-	-	-	-	-
PM Peak	-	-	02:00	-	-	-	04:15	-	-	-	-
Vol.	-	-	986	-	-	-	963	-	-	-	-
P.H.F.	-	-	0.959	-	-	-	0.839	-	-	-	-
Percentage		39.5%	60.5%			45.4%	54.6%				
ADT/AADT		ADT 23,648		AADT 23,648							

















# Counts Unlimited, Inc.

City of Placentia  
 Palm Drive  
 B/ Yorba Linda Boulevard - Valencia Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA054  
 Site Code: 222-16557

Start Time	19-Oct-16 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		9	53			6	50				
12:15		8	67			5	49				
12:30		10	60			5	70				
12:45		5	66	32	246	2	50	18	219	50	465
01:00		4	61			1	64				
01:15		6	74			3	61				
01:30		3	83			1	63				
01:45		2	69	15	287	4	56	9	244	24	531
02:00		5	62			2	64				
02:15		5	50			0	45				
02:30		2	75			0	56				
02:45		1	76	13	263	0	72	2	237	15	500
03:00		1	75			1	51				
03:15		1	80			1	62				
03:30		1	71			2	68				
03:45		3	75	6	301	0	45	4	226	10	527
04:00		3	72			5	72				
04:15		2	95			5	56				
04:30		4	90			4	84				
04:45		10	112	19	369	13	73	27	285	46	654
05:00		9	109			16	90				
05:15		11	106			31	87				
05:30		9	99			41	77				
05:45		19	98	48	412	32	65	120	319	168	731
06:00		28	104			45	64				
06:15		20	94			51	62				
06:30		27	76			55	60				
06:45		47	73	122	347	58	59	209	245	331	592
07:00		52	73			69	48				
07:15		50	72			124	41				
07:30		81	48			96	30				
07:45		93	50	276	243	87	32	376	151	652	394
08:00		75	58			81	31				
08:15		55	52			79	28				
08:30		65	53			82	42				
08:45		62	42	257	205	67	30	309	131	566	336
09:00		53	42			59	32				
09:15		47	47			52	20				
09:30		66	39			41	20				
09:45		40	31	206	159	51	17	203	89	409	248
10:00		43	30			36	10				
10:15		47	18			41	9				
10:30		44	20			43	11				
10:45		55	24	189	92	62	8	182	38	371	130
11:00		56	13			55	6				
11:15		59	13			53	4				
11:30		53	10			56	7				
11:45		72	5	240	41	67	5	231	22	471	63
<b>Total</b>		<b>1423</b>	<b>2965</b>	<b>1423</b>	<b>2965</b>	<b>1690</b>	<b>2206</b>	<b>1690</b>	<b>2206</b>	<b>3113</b>	<b>5171</b>
<b>Combined Total</b>		<b>4388</b>		<b>4388</b>		<b>3896</b>		<b>3896</b>		<b>8284</b>	
AM Peak	-	07:30	-	-	-	07:15	-	-	-	-	-
Vol.	-	304	-	-	-	388	-	-	-	-	-
P.H.F.	-	0.817	-	-	-	0.782	-	-	-	-	-
PM Peak	-	-	04:45	-	-	-	04:30	-	-	-	-
Vol.	-	-	426	-	-	-	334	-	-	-	-
P.H.F.	-	-	0.951	-	-	-	0.928	-	-	-	-
Percentage		32.4%	67.6%			43.4%	56.6%				
ADT/AADT		ADT 8,284		AADT 8,284							







# Counts Unlimited, Inc.

City of Placentia  
 Placentia Avenue  
 B/ Crowther Avenue - Chapman Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA058  
 Site Code: 222-16557

Start Time	02-Nov-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		11	154			10	134				
12:15		6	151			9	172				
12:30		6	133			5	159				
12:45		16	132	39	570	5	165	29	630	68	1200
01:00		5	124			8	170				
01:15		6	145			2	165				
01:30		5	132			2	140				
01:45		11	128	27	529	1	159	13	634	40	1163
02:00		2	149			4	169				
02:15		6	179			5	163				
02:30		6	157			2	177				
02:45		2	159	16	644	4	137	15	646	31	1290
03:00		6	155			4	150				
03:15		3	218			11	142				
03:30		2	178			14	169				
03:45		5	180	16	731	9	170	38	631	54	1362
04:00		3	216			22	163				
04:15		5	221			25	137				
04:30		7	202			51	153				
04:45		3	234	18	873	23	161	121	614	139	1487
05:00		13	215			32	149				
05:15		12	206			46	161				
05:30		21	174			102	166				
05:45		32	139	78	734	72	138	252	614	330	1348
06:00		33	164			81	118				
06:15		41	137			128	117				
06:30		61	110			206	106				
06:45		63	123	198	534	261	103	676	444	874	978
07:00		103	86			269	85				
07:15		190	82			239	69				
07:30		134	66			238	62				
07:45		137	69	564	303	217	49	963	265	1527	568
08:00		89	57			180	46				
08:15		116	53			157	41				
08:30		100	49			183	43				
08:45		81	50	386	209	146	47	666	177	1052	386
09:00		96	57			121	48				
09:15		105	66			131	43				
09:30		99	41			150	27				
09:45		97	37	397	201	143	22	545	140	942	341
10:00		100	28			125	33				
10:15		90	29			118	26				
10:30		108	21			104	18				
10:45		143	27	441	105	134	18	481	95	922	200
11:00		126	17			154	14				
11:15		124	17			146	11				
11:30		169	14			135	11				
11:45		153	8	572	56	139	5	574	41	1146	97
<b>Total</b>		<b>2752</b>	<b>5489</b>	<b>2752</b>	<b>5489</b>	<b>4373</b>	<b>4931</b>	<b>4373</b>	<b>4931</b>	<b>7125</b>	<b>10420</b>
<b>Combined Total</b>			<b>8241</b>		<b>8241</b>		<b>9304</b>		<b>9304</b>		<b>17545</b>
AM Peak	-	11:00	-	-	-	06:45	-	-	-	-	-
Vol.	-	572	-	-	-	1007	-	-	-	-	-
P.H.F.	-	0.753	-	-	-	0.936	-	-	-	-	-
PM Peak	-	-	04:00	-	-	-	01:45	-	-	-	-
Vol.	-	-	873	-	-	-	668	-	-	-	-
P.H.F.	-	-	0.933	-	-	-	0.944	-	-	-	-
Percentage			33.4%		66.6%		47.0%		53.0%		
ADT/AADT			ADT 17,545		AADT 17,545						





# Counts Unlimited, Inc.

City of Placentia  
 Placentia Avenue  
 B/ Bastanchury Road - Rolling Hills Drive  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA061  
 Site Code: 222-16557

Start Time	02-Nov-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	86			8	89				
12:15		3	109			3	95				
12:30		6	79			2	114				
12:45		3	87	17	361	1	99	14	397	31	758
01:00		3	115			3	84				
01:15		6	104			5	77				
01:30		1	100			2	86				
01:45		2	97	12	416	6	84	16	331	28	747
02:00		0	75			2	109				
02:15		4	94			0	95				
02:30		2	119			1	113				
02:45		0	110	6	398	3	105	6	422	12	820
03:00		1	99			2	119				
03:15		4	95			2	111				
03:30		3	117			3	120				
03:45		0	98	8	409	2	120	9	470	17	879
04:00		2	127			3	143				
04:15		4	119			5	141				
04:30		9	108			10	164				
04:45		3	113	18	467	5	148	23	596	41	1063
05:00		6	155			10	143				
05:15		15	131			27	137				
05:30		16	127			30	145				
05:45		11	132	48	545	52	97	119	522	167	1067
06:00		24	114			59	107				
06:15		33	99			82	100				
06:30		47	80			122	84				
06:45		41	87	145	380	148	63	411	354	556	734
07:00		53	66			138	73				
07:15		73	69			171	54				
07:30		122	57			108	49				
07:45		73	54	321	246	89	43	506	219	827	465
08:00		68	54			103	54				
08:15		62	42			85	40				
08:30		59	35			93	48				
08:45		48	41	237	172	100	33	381	175	618	347
09:00		60	46			73	28				
09:15		63	27			80	24				
09:30		61	28			75	23				
09:45		67	31	251	132	64	23	292	98	543	230
10:00		69	25			65	22				
10:15		68	17			60	11				
10:30		87	13			75	15				
10:45		76	10	300	65	68	9	268	57	568	122
11:00		88	7			74	16				
11:15		89	9			72	4				
11:30		98	7			82	7				
11:45		92	5	367	28	89	9	317	36	684	64
<b>Total</b>		<b>1730</b>	<b>3619</b>	<b>1730</b>	<b>3619</b>	<b>2362</b>	<b>3677</b>	<b>2362</b>	<b>3677</b>	<b>4092</b>	<b>7296</b>
<b>Combined Total</b>			<b>5349</b>		<b>5349</b>		<b>6039</b>		<b>6039</b>		<b>11388</b>
AM Peak	-	11:00	-	-	-	06:30	-	-	-	-	-
Vol.	-	367	-	-	-	579	-	-	-	-	-
P.H.F.	-	0.936	-	-	-	0.846	-	-	-	-	-
PM Peak	-	-	05:00	-	-	-	04:00	-	-	-	-
Vol.	-	-	545	-	-	-	596	-	-	-	-
P.H.F.	-	-	0.879	-	-	-	0.909	-	-	-	-
Percentage			32.3%		67.7%		39.1%		60.9%		
ADT/AADT			ADT 11,388		AADT 11,388						









# Counts Unlimited, Inc.

City of Placentia  
 Rose Drive  
 B/ Alta Vista Street - Palm Drive  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA065  
 Site Code: 222-16557

Start Time	19-Oct-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		14	192			21	206				
12:15		19	186			14	198				
12:30		19	226			17	215				
12:45		7	229	59	833	13	210	65	829	124	1662
01:00		10	247			5	213				
01:15		8	212			9	232				
01:30		7	263			7	286				
01:45		6	225	31	947	2	228	23	959	54	1906
02:00		4	243			8	233				
02:15		3	224			4	191				
02:30		9	225			4	240				
02:45		5	245	21	937	4	256	20	920	41	1857
03:00		7	296			1	265				
03:15		4	272			10	289				
03:30		8	256			3	301				
03:45		6	318	25	1142	17	252	31	1107	56	2249
04:00		6	319			12	272				
04:15		10	331			20	311				
04:30		7	311			39	293				
04:45		28	358	51	1319	58	317	129	1193	180	2512
05:00		23	369			68	345				
05:15		33	394			73	334				
05:30		39	376			108	309				
05:45		63	393	158	1532	159	292	408	1280	566	2812
06:00		57	339			227	249				
06:15		72	320			257	274				
06:30		105	298			299	228				
06:45		150	249	384	1206	359	220	1142	971	1526	2177
07:00		123	289			364	157				
07:15		201	189			394	184				
07:30		257	181			399	128				
07:45		297	148	878	807	481	120	1638	589	2516	1396
08:00		222	139			478	128				
08:15		235	137			364	133				
08:30		200	123			323	128				
08:45		218	107	875	506	334	113	1499	502	2374	1008
09:00		200	121			255	99				
09:15		189	129			282	109				
09:30		162	89			272	85				
09:45		137	85	688	424	240	66	1049	359	1737	783
10:00		161	73			195	64				
10:15		134	66			228	42				
10:30		161	50			216	43				
10:45		140	42	596	231	211	41	850	190	1446	421
11:00		185	36			186	35				
11:15		183	31			203	28				
11:30		194	34			205	20				
11:45		193	23	755	124	196	16	790	99	1545	223
<b>Total</b>		4521	10008	4521	10008	7644	8998	7644	8998	12165	19006
<b>Combined Total</b>		14529		14529		16642		16642		31171	
AM Peak	-	07:30	-	-	-	07:15	-	-	-	-	-
Vol.	-	1011	-	-	-	1752	-	-	-	-	-
P.H.F.	-	0.851	-	-	-	0.911	-	-	-	-	-
PM Peak	-	-	05:00	-	-	-	04:45	-	-	-	-
Vol.	-	-	1532	-	-	-	1305	-	-	-	-
P.H.F.	-	-	0.972	-	-	-	0.946	-	-	-	-
Percentage		31.1%	68.9%			45.9%	54.1%				
ADT/AADT		ADT 31,171		AADT 31,171							







# Counts Unlimited, Inc.

City of Placentia  
 Santa Fe Avenue  
 B/ Melrose Street - Bradford Avenue  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA069  
 Site Code: 222-16557

Start Time	20-Oct-16 Thu	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	25			4	32				
12:15		3	29			2	35				
12:30		4	23			0	28				
12:45		1	33	13	110	2	34	8	129	21	239
01:00		1	36			0	19				
01:15		4	29			1	27				
01:30		2	29			1	22				
01:45		1	26	8	120	0	24	2	92	10	212
02:00		1	31			0	28				
02:15		4	42			0	21				
02:30		0	68			0	31				
02:45		1	62	6	203	1	72	1	152	7	355
03:00		0	66			0	65				
03:15		2	53			1	32				
03:30		1	56			1	48				
03:45		0	44	3	219	2	50	4	195	7	414
04:00		3	54			4	41				
04:15		1	57			2	22				
04:30		2	45			6	36				
04:45		2	51	8	207	5	30	17	129	25	336
05:00		5	54			2	30				
05:15		5	70			8	41				
05:30		6	55			16	26				
05:45		4	48	20	227	5	29	31	126	51	353
06:00		8	70			13	53				
06:15		9	50			15	42				
06:30		42	32			37	35				
06:45		23	30	82	182	42	28	107	158	189	340
07:00		44	27			34	25				
07:15		69	29			41	30				
07:30		98	14			81	29				
07:45		43	19	254	89	98	15	254	99	508	188
08:00		17	24			35	18				
08:15		32	13			28	16				
08:30		20	17			19	14				
08:45		24	15	93	69	26	10	108	58	201	127
09:00		25	15			18	11				
09:15		18	14			19	10				
09:30		17	20			20	15				
09:45		28	16	88	65	16	13	73	49	161	114
10:00		28	10			15	11				
10:15		20	10			18	14				
10:30		22	17			17	11				
10:45		32	11	102	48	21	0	71	36	173	84
11:00		24	3			14	3				
11:15		33	11			15	3				
11:30		34	1			31	2				
11:45		30	7	121	22	33	1	93	9	214	31
<b>Total</b>		<b>798</b>	<b>1561</b>	<b>798</b>	<b>1561</b>	<b>769</b>	<b>1232</b>	<b>769</b>	<b>1232</b>	<b>1567</b>	<b>2793</b>
<b>Combined Total</b>		<b>2359</b>		<b>2359</b>		<b>2001</b>		<b>2001</b>		<b>4360</b>	
AM Peak	-	07:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	254	-	-	-	255	-	-	-	-	-
P.H.F.	-	0.648	-	-	-	0.651	-	-	-	-	-
PM Peak	-	-	02:30	-	-	-	02:45	-	-	-	-
Vol.	-	-	249	-	-	-	217	-	-	-	-
P.H.F.	-	-	0.915	-	-	-	0.753	-	-	-	-
Percentage		33.8%	66.2%			38.4%	61.6%				
ADT/AADT		ADT 4,360		AADT 4,360							





# Counts Unlimited, Inc.

City of Placentia  
 Valencia Avenue  
 B/ Yorba Linda Boulevard - Bastanchury Road  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA071  
 Site Code: 222-16557

Start Time	19-Oct-16 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	59			4	84				
12:15		3	67			3	71				
12:30		4	74			4	55				
12:45		7	67	19	267	3	70	14	280	33	547
01:00		2	45			1	58				
01:15		0	68			0	89				
01:30		1	75			2	76				
01:45		4	112	7	300	5	146	8	369	15	669
02:00		5	81			2	61				
02:15		3	52			0	75				
02:30		2	84			0	109				
02:45		0	105	10	322	4	145	6	390	16	712
03:00		0	80			2	100				
03:15		4	76			1	95				
03:30		0	87			3	96				
03:45		0	81	4	324	3	68	9	359	13	683
04:00		3	86			3	102				
04:15		6	108			2	109				
04:30		4	111			5	105				
04:45		9	116	22	421	5	101	15	417	37	838
05:00		22	134			25	99				
05:15		16	94			25	87				
05:30		13	96			22	96				
05:45		17	91	68	415	46	100	118	382	186	797
06:00		13	117			56	109				
06:15		24	103			84	88				
06:30		99	89			108	84				
06:45		50	86	186	395	108	71	356	352	542	747
07:00		45	66			96	71				
07:15		115	70			113	50				
07:30		168	54			235	34				
07:45		103	37	431	227	142	33	586	188	1017	415
08:00		60	29			68	62				
08:15		58	24			91	32				
08:30		52	42			95	36				
08:45		60	49	230	144	80	35	334	165	564	309
09:00		48	27			68	29				
09:15		45	31			58	20				
09:30		46	15			73	14				
09:45		37	18	176	91	49	22	248	85	424	176
10:00		42	15			65	17				
10:15		39	15			55	16				
10:30		41	10			37	7				
10:45		45	9	167	49	58	6	215	46	382	95
11:00		38	9			52	4				
11:15		33	7			62	9				
11:30		47	7			56	6				
11:45		52	0	170	23	65	4	235	23	405	46
<b>Total</b>		<b>1490</b>	<b>2978</b>	<b>1490</b>	<b>2978</b>	<b>2144</b>	<b>3056</b>	<b>2144</b>	<b>3056</b>	<b>3634</b>	<b>6034</b>
<b>Combined Total</b>		<b>4468</b>		<b>4468</b>		<b>5200</b>		<b>5200</b>		<b>9668</b>	
AM Peak	-	07:15	-	-	-	07:00	-	-	-	-	-
Vol.	-	446	-	-	-	586	-	-	-	-	-
P.H.F.	-	0.664	-	-	-	0.623	-	-	-	-	-
PM Peak	-	-	04:15	-	-	-	02:30	-	-	-	-
Vol.	-	-	469	-	-	-	449	-	-	-	-
P.H.F.	-	-	0.875	-	-	-	0.774	-	-	-	-
Percentage		33.3%	66.7%			41.2%	58.8%				
ADT/AADT		ADT 9,668		AADT 9,668							











# Counts Unlimited, Inc.

City of Placentia  
 Yorba Linda Boulevard  
 B/ Bradford Avenue + Kromer Boulevard  
 24 Hour Directional Volume Count

VALANCIA TO  
ROSE

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA077  
 Site Code: 222-16557

Start Time	19-Oct-16 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		22	178			25	191				
12:15		20	170			23	179				
12:30		10	182			18	190				
12:45		8	223	60	753	11	168	77	728	137	1481
01:00		13	211			12	182				
01:15		5	197			7	188				
01:30		6	197			7	217				
01:45		10	203	34	808	8	232	34	819	68	1627
02:00		11	220			14	184				
02:15		3	197			11	219				
02:30		5	197			5	208				
02:45		7	221	26	835	2	218	32	829	58	1664
03:00		6	207			9	196				
03:15		8	211			7	215				
03:30		9	217			13	200				
03:45		5	231	28	866	11	212	40	823	68	1689
04:00		8	215			11	219				
04:15		7	246			9	184				
04:30		17	242			17	191				
04:45		27	<b>242</b>	59	945	30	<b>234</b>	67	828	126	1773
05:00		20	<b>228</b>			38	<b>240</b>				
05:15		29	<b>269</b>			41	<b>265</b>				
05:30		22	<b>260</b>			45	<b>208</b>				
05:45		44	222	115	979	47	212	171	925	286	1904
06:00		39	209			53	223				
06:15		59	202			80	213				
06:30		94	215			136	166				
06:45		122	218	314	844	124	184	393	786	707	1630
07:00		108	158			116	162				
07:15		123	135			<b>217</b>	117				
07:30		<b>174</b>	121			<b>294</b>	120				
07:45		<b>254</b>	112	659	526	<b>268</b>	124	895	523	1554	1049
08:00		<b>139</b>	111			<b>213</b>	106				
08:15		<b>168</b>	130			207	124				
08:30		159	105			152	117				
08:45		151	127	617	473	158	104	730	451	1347	924
09:00		126	87			143	101				
09:15		151	98			137	103				
09:30		135	70			183	73				
09:45		141	64	553	319	168	59	631	336	1184	655
10:00		160	66			161	61				
10:15		142	34			152	42				
10:30		131	55			152	41				
10:45		143	58	576	213	172	41	637	185	1213	398
11:00		168	41			168	38				
11:15		152	40			153	20				
11:30		179	40			184	38				
11:45		164	24	663	145	176	20	681	116	1344	261
<b>Total</b>		<b>3704</b>	<b>7706</b>	<b>3704</b>	<b>7706</b>	<b>4388</b>	<b>7349</b>	<b>4388</b>	<b>7349</b>	<b>8092</b>	<b>15055</b>
<b>Combined Total</b>		<b>11410</b>		<b>11410</b>		<b>11737</b>		<b>11737</b>		<b>23147</b>	
AM Peak	-	07:30	-	-	-	07:15	-	-	-	-	-
Vol.	-	735	-	-	-	992	-	-	-	-	-
P.H.F.	-	0.723	-	-	-	0.844	-	-	-	-	-
PM Peak	-	-	04:45	-	-	-	04:45	-	-	-	-
Vol.	-	-	999	-	-	-	947	-	-	-	-
P.H.F.	-	-	0.928	-	-	-	0.893	-	-	-	-
Percentage		32.5%	67.5%			37.4%	62.6%				
ADT/AADT		ADT 23,147		AADT 23,147							



# Counts Unlimited, Inc.

City of Placentia  
 Yorba Linda Boulevard  
 B/ Rose Drive - Eastern City Limits  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: 951-268-6268  
 Email: counts@countsunlimited.com

PLA078  
 Site Code: 222-16557

Start Time	19-Oct-16 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		13	177			9	195				
12:15		23	180			14	197				
12:30		6	204			6	177				
12:45		12	197	54	758	9	206	38	775	92	1533
01:00		13	193			10	193				
01:15		6	210			6	239				
01:30		4	236			4	199				
01:45		9	210	32	849	3	203	23	834	55	1683
02:00		10	244			6	233				
02:15		4	226			5	210				
02:30		8	266			2	186				
02:45		4	259	26	995	5	258	18	887	44	1882
03:00		5	250			4	226				
03:15		4	248			5	238				
03:30		6	273			6	235				
03:45		5	301	20	1072	8	229	23	928	43	2000
04:00		14	249			22	208				
04:15		11	233			25	244				
04:30		18	271			28	248				
04:45		27	268	70	1021	36	236	111	936	181	1957
05:00		27	265			45	229				
05:15		34	294			62	239				
05:30		49	260			59	234				
05:45		41	234	151	1053	71	240	237	942	388	1995
06:00		47	229			122	245				
06:15		93	230			173	220				
06:30		145	222			158	167				
06:45		138	208	423	889	185	158	638	790	1061	1679
07:00		161	188			261	173				
07:15		211	172			343	135				
07:30		241	137			272	124				
07:45		179	150	792	647	252	155	1128	587	1920	1234
08:00		171	130			220	119				
08:15		178	119			248	107				
08:30		180	108			222	103				
08:45		152	97	681	454	205	117	895	446	1576	900
09:00		158	84			215	82				
09:15		138	69			186	74				
09:30		136	75			186	54				
09:45		144	68	576	296	192	67	779	277	1355	573
10:00		169	60			167	45				
10:15		135	59			171	34				
10:30		164	43			191	36				
10:45		138	46	606	208	181	32	710	147	1316	355
11:00		156	28			208	25				
11:15		173	29			180	18				
11:30		180	29			201	21				
11:45		171	19	680	105	202	17	791	81	1471	186
<b>Total</b>		<b>4111</b>	<b>8347</b>	<b>4111</b>	<b>8347</b>	<b>5391</b>	<b>7630</b>	<b>5391</b>	<b>7630</b>	<b>9502</b>	<b>15977</b>
<b>Combined Total</b>		<b>12458</b>		<b>12458</b>		<b>13021</b>		<b>13021</b>		<b>25479</b>	
AM Peak	-	07:15	-	-	-	07:00	-	-	-	-	-
Vol.	-	802	-	-	-	1128	-	-	-	-	-
P.H.F.	-	0.832	-	-	-	0.822	-	-	-	-	-
PM Peak	-	-	04:30	-	-	-	05:15	-	-	-	-
Vol.	-	-	1098	-	-	-	958	-	-	-	-
P.H.F.	-	-	0.912	-	-	-	0.966	-	-	-	-
Percentage		33.0%	67.0%			41.4%	58.6%				
ADT/AADT		ADT 25,479		AADT 25,479							

# **APPENDIX B – INTERSECTION PEAK HOUR COUNT DATA SHEETS**

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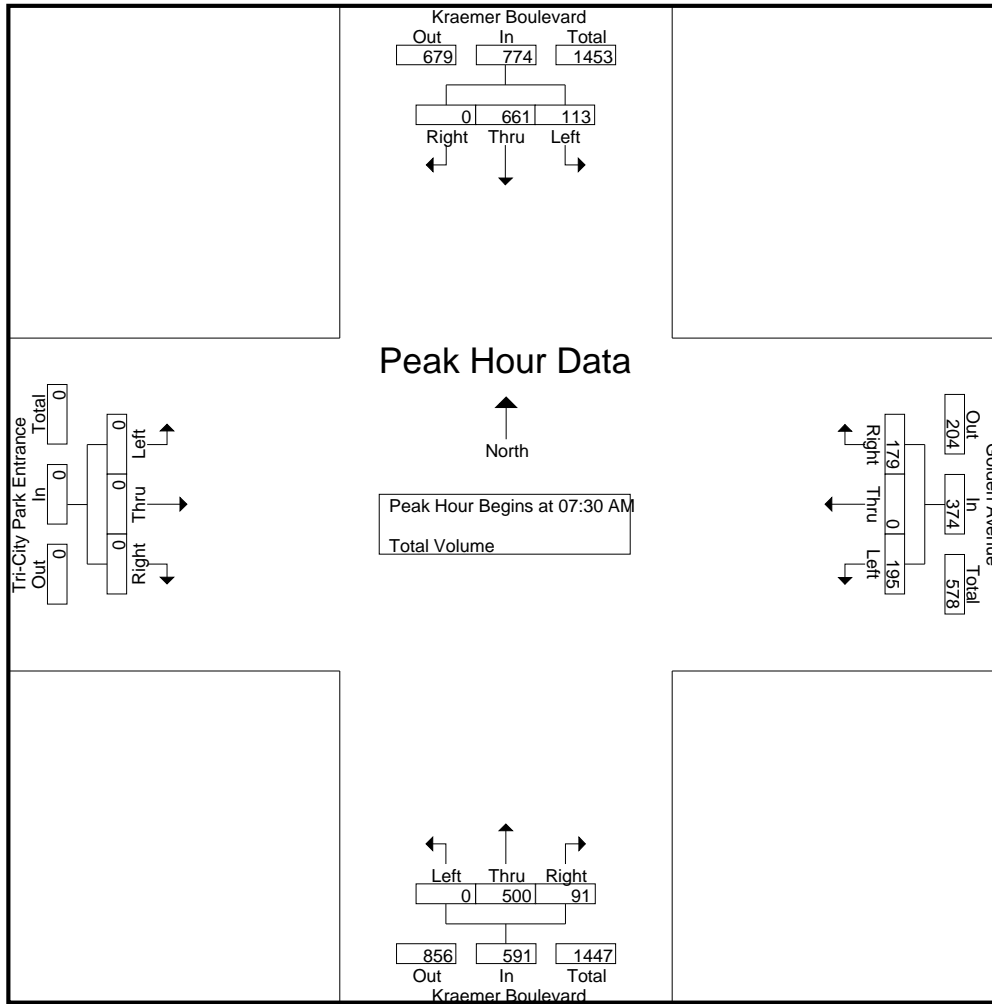
City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Tri-City Park / Golden Avenue  
 Weather: Clear

File Name : 01PLAKRGOAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	141	0	144	36	0	26	62	0	70	11	81	0	0	0	0	287
07:15 AM	15	166	0	181	33	0	31	64	0	88	22	110	0	0	0	0	355
07:30 AM	60	197	0	257	48	0	34	82	0	91	35	126	0	0	0	0	465
07:45 AM	39	151	0	190	50	0	88	138	0	170	23	193	0	0	0	0	521
Total	117	655	0	772	167	0	179	346	0	419	91	510	0	0	0	0	1628
08:00 AM	5	150	0	155	50	0	25	75	0	104	15	119	0	0	0	0	349
08:15 AM	9	163	0	172	47	0	32	79	0	135	18	153	0	0	0	0	404
08:30 AM	8	152	0	160	59	0	33	92	0	126	27	153	0	0	0	0	405
08:45 AM	15	132	5	152	22	0	22	44	1	177	17	195	0	0	1	1	392
Total	37	597	5	639	178	0	112	290	1	542	77	620	0	0	1	1	1550
Grand Total	154	1252	5	1411	345	0	291	636	1	961	168	1130	0	0	1	1	3178
Apprch %	10.9	88.7	0.4		54.2	0	45.8		0.1	85	14.9		0	0	100		
Total %	4.8	39.4	0.2	44.4	10.9	0	9.2	20	0	30.2	5.3	35.6	0	0	0	0	

Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	60	197	0	257	48	0	34	82	0	91	35	126	0	0	0	0	465
07:45 AM	39	151	0	190	50	0	88	138	0	170	23	193	0	0	0	0	521
08:00 AM	5	150	0	155	50	0	25	75	0	104	15	119	0	0	0	0	349
08:15 AM	9	163	0	172	47	0	32	79	0	135	18	153	0	0	0	0	404
Total Volume	113	661	0	774	195	0	179	374	0	500	91	591	0	0	0	0	1739
% App. Total	14.6	85.4	0		52.1	0	47.9		0	84.6	15.4		0	0	0		
PHF	.471	.839	.000	.753	.975	.000	.509	.678	.000	.735	.650	.766	.000	.000	.000	.000	.834



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				08:00 AM				08:00 AM			
+0 mins.	15	166	0	181	50	0	<b>88</b>	<b>138</b>	0	104	15	119	0	0	0	0
+15 mins.	<b>60</b>	<b>197</b>	0	<b>257</b>	50	0	25	75	0	135	18	153	0	0	0	0
+30 mins.	39	151	0	190	47	0	32	79	0	126	<b>27</b>	153	0	0	0	0
+45 mins.	5	150	0	155	<b>59</b>	0	33	92	<b>1</b>	<b>177</b>	17	<b>195</b>	0	0	<b>1</b>	<b>1</b>
Total Volume	119	664	0	783	206	0	178	384	1	542	77	620	0	0	1	1
% App. Total	15.2	84.8	0		53.6	0	46.4		0.2	87.4	12.4		0	0	100	
PHF	.496	.843	.000	.762	.873	.000	.506	.696	.250	.766	.713	.795	.000	.000	.250	.250

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Tri-City Park / Golden Avenue  
 Weather: Clear

File Name : 01PLAKRGOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	28	242	8	278	23	3	22	48	6	142	16	164	0	3	10	13	503
04:15 PM	29	220	6	255	20	4	19	43	5	153	23	181	4	3	7	14	493
04:30 PM	27	259	9	295	22	2	15	39	12	158	31	201	5	6	8	19	554
04:45 PM	21	227	3	251	18	1	24	43	15	156	23	194	6	5	5	16	504
Total	105	948	26	1079	83	10	80	173	38	609	93	740	15	17	30	62	2054
05:00 PM	36	265	3	304	21	1	34	56	6	149	20	175	5	0	16	21	556
05:15 PM	33	224	4	261	28	9	21	58	6	143	25	174	7	2	11	20	513
05:30 PM	19	199	2	220	26	3	29	58	7	171	25	203	9	2	13	24	505
05:45 PM	29	156	5	190	25	2	22	49	9	162	22	193	1	1	9	11	443
Total	117	844	14	975	100	15	106	221	28	625	92	745	22	5	49	76	2017
Grand Total	222	1792	40	2054	183	25	186	394	66	1234	185	1485	37	22	79	138	4071
Apprch %	10.8	87.2	1.9		46.4	6.3	47.2		4.4	83.1	12.5		26.8	15.9	57.2		
Total %	5.5	44	1	50.5	4.5	0.6	4.6	9.7	1.6	30.3	4.5	36.5	0.9	0.5	1.9	3.4	

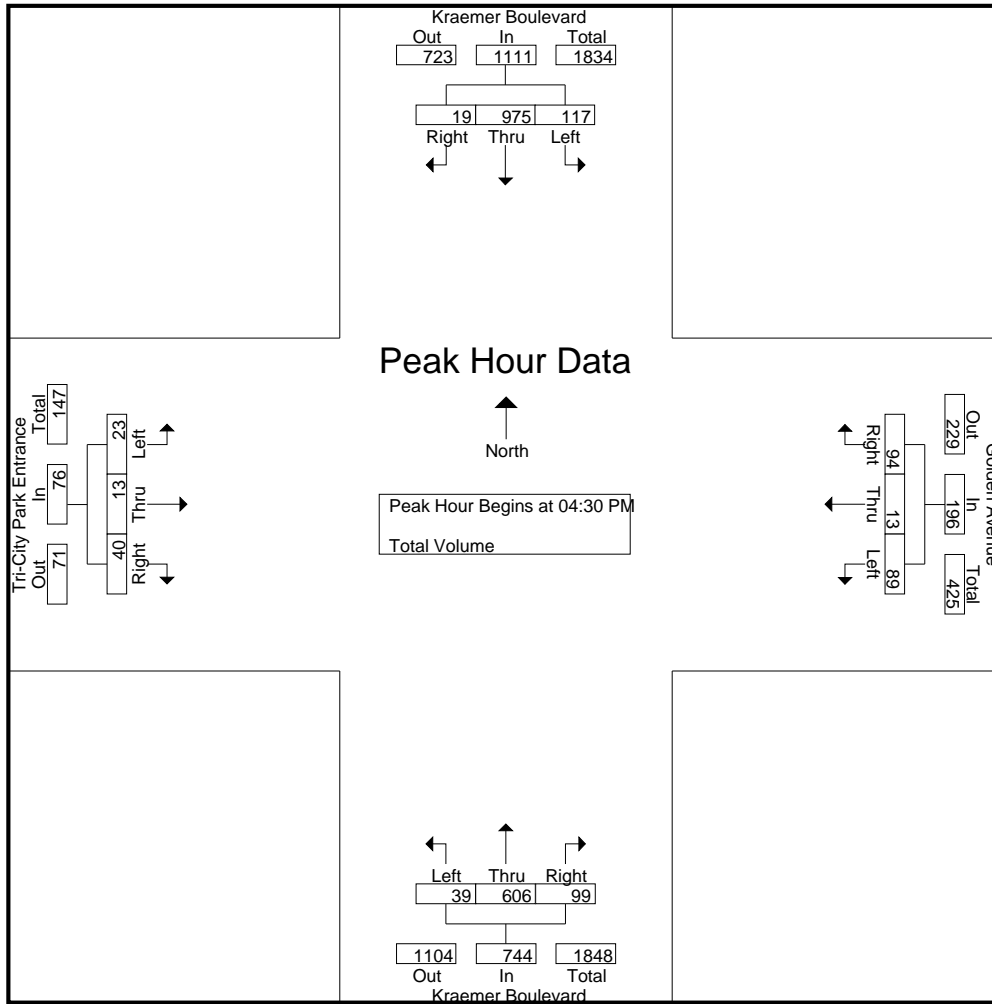
Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	27	259	9	295	22	2	15	39	12	158	31	201	5	6	8	19	554
04:45 PM	21	227	3	251	18	1	24	43	15	156	23	194	6	5	5	16	504
05:00 PM	36	265	3	304	21	1	34	56	6	149	20	175	5	0	16	21	556
05:15 PM	33	224	4	261	28	9	21	58	6	143	25	174	7	2	11	20	513
Total Volume	117	975	19	1111	89	13	94	196	39	606	99	744	23	13	40	76	2127
% App. Total	10.5	87.8	1.7		45.4	6.6	48		5.2	81.5	13.3		30.3	17.1	52.6		
PHF	.813	.920	.528	.914	.795	.361	.691	.845	.650	.959	.798	.925	.821	.542	.625	.905	.956

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Tri-City Park / Golden Avenue  
 Weather: Clear

File Name : 01PLAKRGOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				04:15 PM				04:45 PM			
+0 mins.	27	259	9	295	21	1	34	56	5	153	23	181	6	5	5	16
+15 mins.	21	227	3	251	28	9	21	58	12	158	31	201	5	0	16	21
+30 mins.	36	265	3	304	26	3	29	58	15	156	23	194	7	2	11	20
+45 mins.	33	224	4	261	25	2	22	49	6	149	20	175	9	2	13	24
Total Volume	117	975	19	1111	100	15	106	221	38	616	97	751	27	9	45	81
% App. Total	10.5	87.8	1.7		45.2	6.8	48		5.1	82	12.9		33.3	11.1	55.6	
PHF	.813	.920	.528	.914	.893	.417	.779	.953	.633	.975	.782	.934	.750	.450	.703	.844

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Tri-City Park / Golden Avenue  
 Weather: Clear

File Name : 01PLAKRGOAM  
 Site Code : 22117718  
 Start Date : 1/10/2018  
 Page No : 1

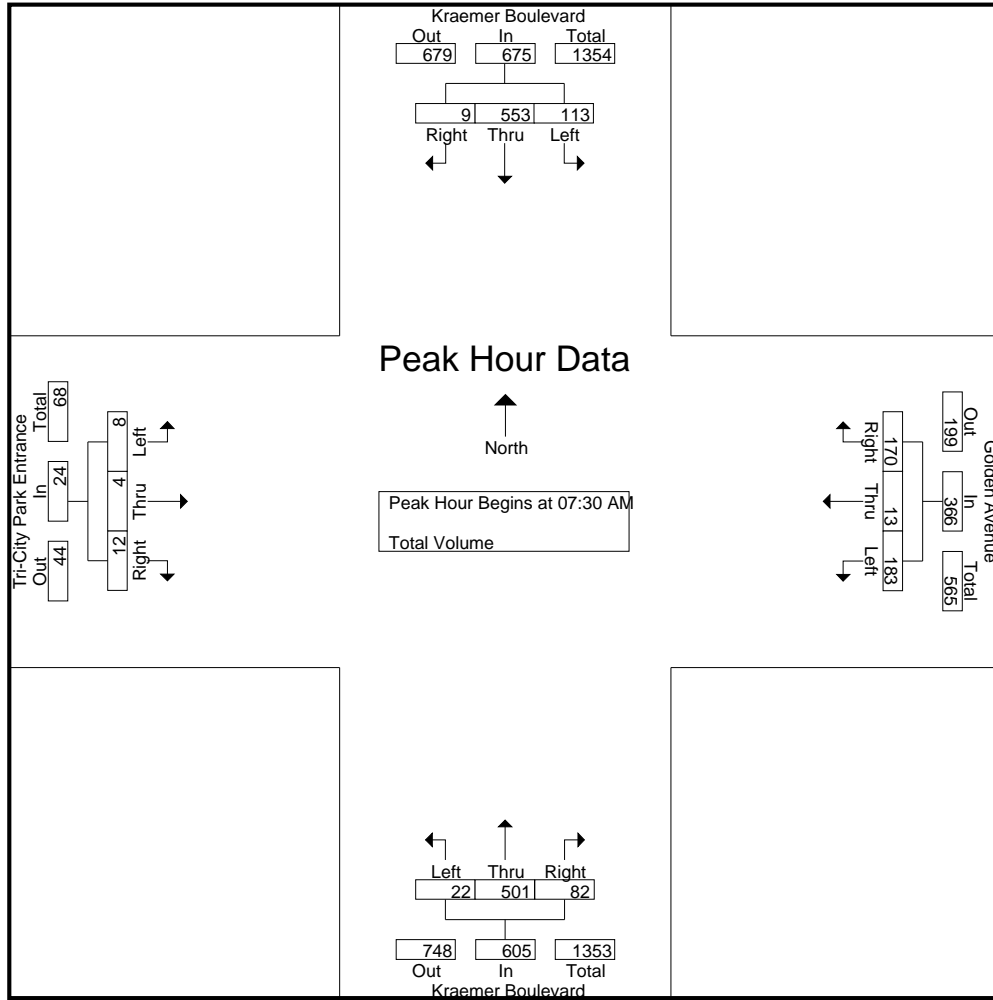
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	8	167	1	176	31	0	23	54	4	79	7	90	1	0	0	1	321
07:15 AM	23	130	5	158	39	2	35	76	3	93	13	109	1	0	0	1	344
07:30 AM	71	172	1	244	51	2	44	97	4	88	34	126	1	1	3	5	472
07:45 AM	26	133	2	161	41	4	71	116	6	170	19	195	1	1	2	4	476
Total	128	602	9	739	162	8	173	343	17	430	73	520	4	2	5	11	1613
08:00 AM	5	113	1	119	43	2	31	76	5	117	11	133	2	0	4	6	334
08:15 AM	11	135	5	151	48	5	24	77	7	126	18	151	4	2	3	9	388
08:30 AM	11	110	2	123	57	1	27	85	8	118	20	146	5	3	7	15	369
08:45 AM	11	101	1	113	32	4	22	58	11	116	19	146	4	1	4	9	326
Total	38	459	9	506	180	12	104	296	31	477	68	576	15	6	18	39	1417
Grand Total	166	1061	18	1245	342	20	277	639	48	907	141	1096	19	8	23	50	3030
Apprch %	13.3	85.2	1.4		53.5	3.1	43.3		4.4	82.8	12.9		38	16	46		
Total %	5.5	35	0.6	41.1	11.3	0.7	9.1	21.1	1.6	29.9	4.7	36.2	0.6	0.3	0.8	1.7	

Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	71	172	1	244	51	2	44	97	4	88	34	126	1	1	3	5	472
07:45 AM	26	133	2	161	41	4	71	116	6	170	19	195	1	1	2	4	476
08:00 AM	5	113	1	119	43	2	31	76	5	117	11	133	2	0	4	6	334
08:15 AM	11	135	5	151	48	5	24	77	7	126	18	151	4	2	3	9	388
Total Volume	113	553	9	675	183	13	170	366	22	501	82	605	8	4	12	24	1670
% App. Total	16.7	81.9	1.3		50	3.6	46.4		3.6	82.8	13.6		33.3	16.7	50		
PHF	.398	.804	.450	.692	.897	.650	.599	.789	.786	.737	.603	.776	.500	.500	.750	.667	.877

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Tri-City Park / Golden Avenue  
 Weather: Clear

File Name : 01PLAKRGOAM  
 Site Code : 22117718  
 Start Date : 1/10/2018  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:45 AM				08:00 AM			
+0 mins.	8	167	1	176	<b>51</b>	2	44	97	6	<b>170</b>	19	<b>195</b>	2	0	4	6
+15 mins.	23	130	5	158	41	4	<b>71</b>	<b>116</b>	5	117	11	133	4	2	3	9
+30 mins.	<b>71</b>	<b>172</b>	1	<b>244</b>	43	2	31	76	7	126	18	151	<b>5</b>	<b>3</b>	<b>7</b>	<b>15</b>
+45 mins.	26	133	2	161	48	<b>5</b>	24	77	<b>8</b>	118	<b>20</b>	146	4	1	4	9
Total Volume	128	602	9	739	183	13	170	366	26	531	68	625	15	6	18	39
% App. Total	17.3	81.5	1.2		50	3.6	46.4		4.2	85	10.9		38.5	15.4	46.2	
PHF	.451	.875	.450	.757	.897	.650	.599	.789	.813	.781	.850	.801	.750	.500	.643	.650



City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Tri-City Park / Golden Avenue  
 Weather: Clear

File Name : 01PLAKRGOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

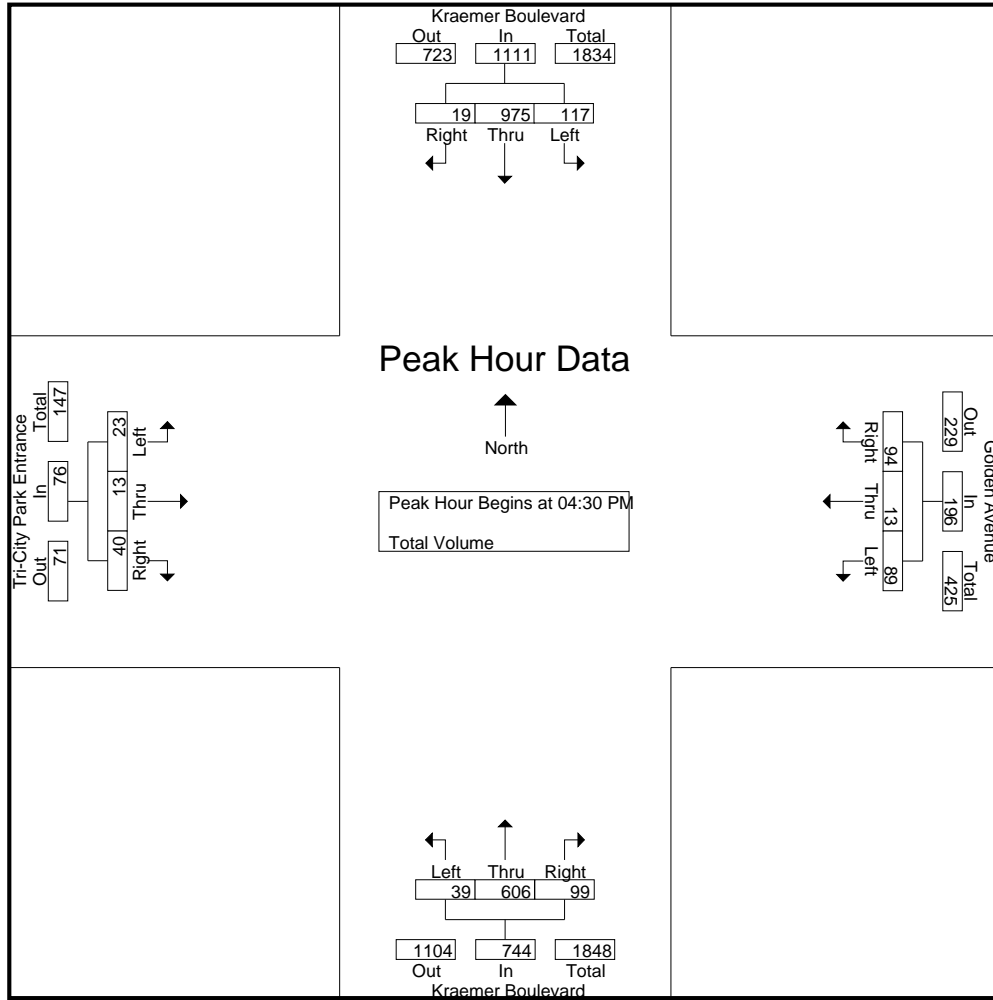
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	28	242	8	278	23	3	22	48	6	142	16	164	0	3	10	13	503
04:15 PM	29	220	6	255	20	4	19	43	5	153	23	181	4	3	7	14	493
04:30 PM	27	259	9	295	22	2	15	39	12	158	31	201	5	6	8	19	554
04:45 PM	21	227	3	251	18	1	24	43	15	156	23	194	6	5	5	16	504
Total	105	948	26	1079	83	10	80	173	38	609	93	740	15	17	30	62	2054
05:00 PM	36	265	3	304	21	1	34	56	6	149	20	175	5	0	16	21	556
05:15 PM	33	224	4	261	28	9	21	58	6	143	25	174	7	2	11	20	513
05:30 PM	19	199	2	220	26	3	29	58	7	171	25	203	9	2	13	24	505
05:45 PM	29	156	5	190	25	2	22	49	9	162	22	193	1	1	9	11	443
Total	117	844	14	975	100	15	106	221	28	625	92	745	22	5	49	76	2017
Grand Total	222	1792	40	2054	183	25	186	394	66	1234	185	1485	37	22	79	138	4071
Apprch %	10.8	87.2	1.9		46.4	6.3	47.2		4.4	83.1	12.5		26.8	15.9	57.2		
Total %	5.5	44	1	50.5	4.5	0.6	4.6	9.7	1.6	30.3	4.5	36.5	0.9	0.5	1.9	3.4	

Start Time	Kraemer Boulevard Southbound				Golden Avenue Westbound				Kraemer Boulevard Northbound				Tri-City Park Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	27	259	<b>9</b>	295	22	2	15	39	12	<b>158</b>	<b>31</b>	<b>201</b>	5	<b>6</b>	8	19	554
04:45 PM	21	227	3	251	18	1	24	43	<b>15</b>	156	23	194	6	5	5	16	504
05:00 PM	<b>36</b>	<b>265</b>	3	<b>304</b>	21	1	<b>34</b>	56	6	149	20	175	5	0	<b>16</b>	<b>21</b>	<b>556</b>
05:15 PM	33	224	4	261	<b>28</b>	<b>9</b>	21	<b>58</b>	6	143	25	174	<b>7</b>	2	11	20	513
Total Volume	117	975	19	1111	89	13	94	196	39	606	99	744	23	13	40	76	2127
% App. Total	10.5	87.8	1.7		45.4	6.6	48		5.2	81.5	13.3		30.3	17.1	52.6		
PHF	.813	.920	.528	.914	.795	.361	.691	.845	.650	.959	.798	.925	.821	.542	.625	.905	.956

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Tri-City Park / Golden Avenue  
 Weather: Clear

File Name : 01PLAKRGOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				04:15 PM				04:45 PM			
+0 mins.	27	259	9	295	21	1	34	56	5	153	23	181	6	5	5	16
+15 mins.	21	227	3	251	28	9	21	58	12	158	31	201	5	0	16	21
+30 mins.	36	265	3	304	26	3	29	58	15	156	23	194	7	2	11	20
+45 mins.	33	224	4	261	25	2	22	49	6	149	20	175	9	2	13	24
Total Volume	117	975	19	1111	100	15	106	221	38	616	97	751	27	9	45	81
% App. Total	10.5	87.8	1.7		45.2	6.8	48		5.1	82	12.9		33.3	11.1	55.6	
PHF	.813	.920	.528	.914	.893	.417	.779	.953	.633	.975	.782	.934	.750	.450	.703	.844

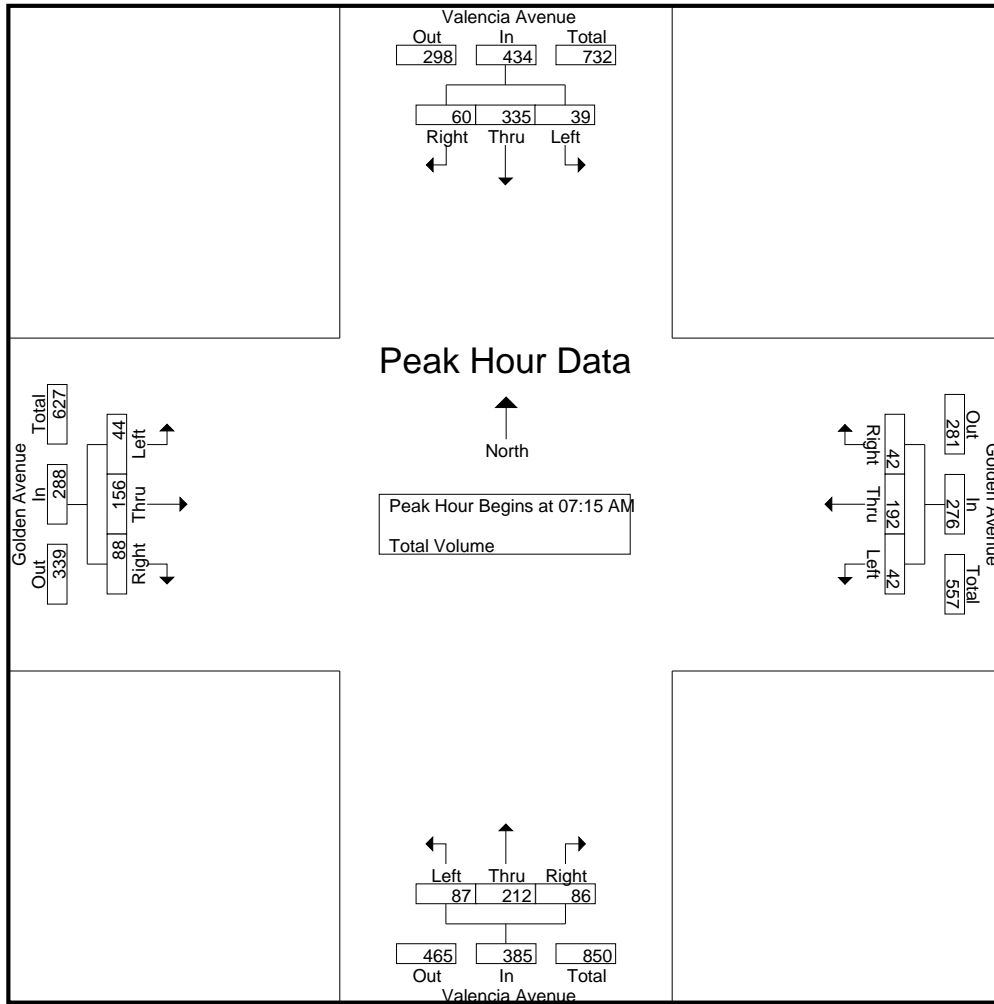
City of Placentia  
 N/S: Valencia Avenue  
 E/W: Golden Avenue  
 Weather: Clear

File Name : 02PLAVAGOAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Golden Avenue Westbound				Valencia Avenue Northbound				Golden Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	2	81	10	93	5	12	2	19	7	35	3	45	8	11	4	23	180
07:15 AM	3	83	13	99	8	33	10	51	11	36	22	69	8	24	17	49	268
07:30 AM	26	137	10	173	12	55	14	81	19	49	32	100	7	77	45	129	483
07:45 AM	6	55	17	78	15	74	12	101	36	86	26	148	21	42	22	85	412
Total	37	356	50	443	40	174	38	252	73	206	83	362	44	154	88	286	1343
08:00 AM	4	60	20	84	7	30	6	43	21	41	6	68	8	13	4	25	220
08:15 AM	7	63	11	81	7	21	2	30	24	38	10	72	7	12	8	27	210
08:30 AM	3	76	9	88	3	27	6	36	22	33	7	62	12	15	11	38	224
08:45 AM	7	63	7	77	3	24	8	35	5	44	10	59	8	20	7	35	206
Total	21	262	47	330	20	102	22	144	72	156	33	261	35	60	30	125	860
Grand Total	58	618	97	773	60	276	60	396	145	362	116	623	79	214	118	411	2203
Apprch %	7.5	79.9	12.5		15.2	69.7	15.2		23.3	58.1	18.6		19.2	52.1	28.7		
Total %	2.6	28.1	4.4	35.1	2.7	12.5	2.7	18	6.6	16.4	5.3	28.3	3.6	9.7	5.4	18.7	

Start Time	Valencia Avenue Southbound				Golden Avenue Westbound				Valencia Avenue Northbound				Golden Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	3	83	13	99	8	33	10	51	11	36	22	69	8	24	17	49	268
07:30 AM	26	137	10	173	12	55	14	81	19	49	32	100	7	77	45	129	483
07:45 AM	6	55	17	78	15	74	12	101	36	86	26	148	21	42	22	85	412
08:00 AM	4	60	20	84	7	30	6	43	21	41	6	68	8	13	4	25	220
Total Volume	39	335	60	434	42	192	42	276	87	212	86	385	44	156	88	288	1383
% App. Total	9	77.2	13.8		15.2	69.6	15.2		22.6	55.1	22.3		15.3	54.2	30.6		
PHF	.375	.611	.750	.627	.700	.649	.750	.683	.604	.616	.672	.650	.524	.506	.489	.558	.716



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:30 AM				07:45 AM			
+0 mins.	2	81	10	93	8	33	10	51	19	49	32	100	8	24	17	49
+15 mins.	3	83	13	99	12	55	14	81	36	86	26	148	7	77	45	129
+30 mins.	26	137	10	173	15	74	12	101	21	41	6	68	21	42	22	85
+45 mins.	6	55	17	78	7	30	6	43	24	38	10	72	8	13	4	25
Total Volume	37	356	50	443	42	192	42	276	100	214	74	388	44	156	88	288
% App. Total	8.4	80.4	11.3		15.2	69.6	15.2		25.8	55.2	19.1		15.3	54.2	30.6	
PHF	.356	.650	.735	.640	.700	.649	.750	.683	.694	.622	.578	.655	.524	.506	.489	.558

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Golden Avenue  
 Weather: Clear

File Name : 02PLAVAGOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

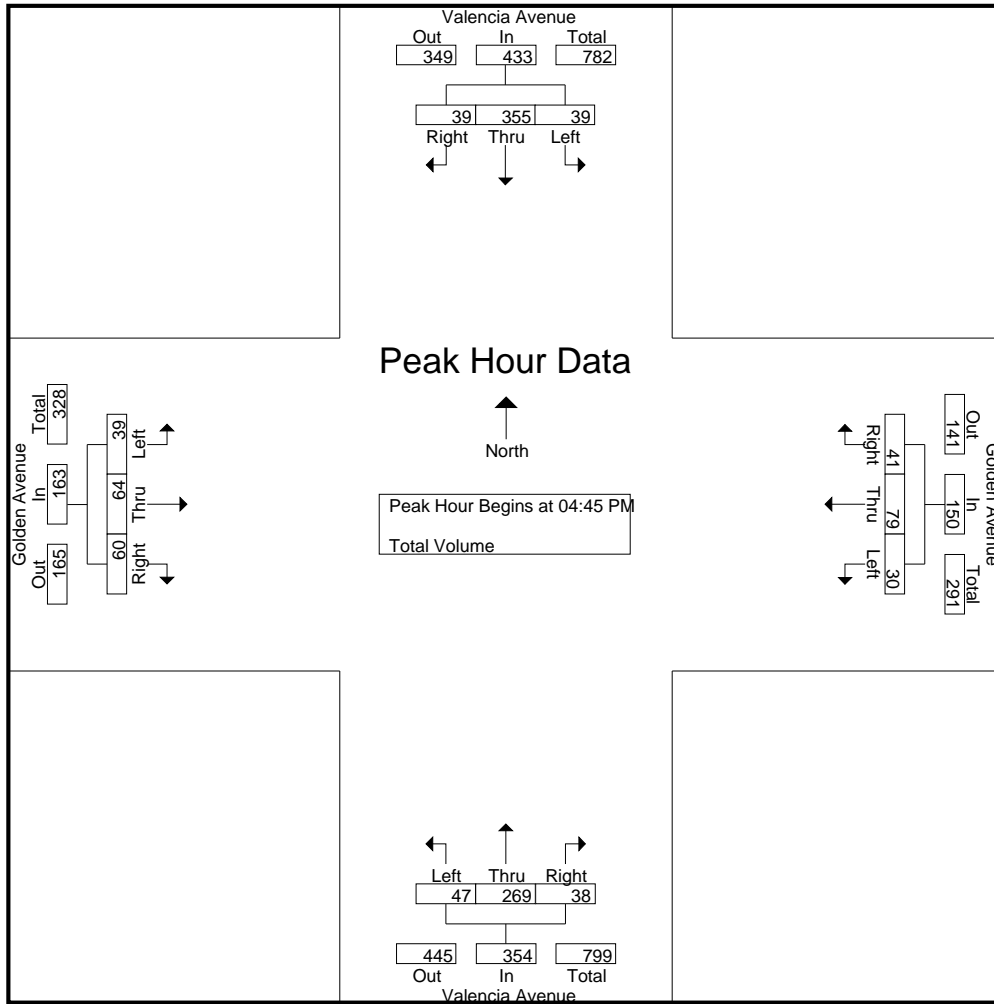
Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Golden Avenue Westbound				Valencia Avenue Northbound				Golden Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	6	82	15	103	8	27	1	36	10	56	5	71	8	13	13	34	244
04:15 PM	3	59	6	68	7	18	13	38	9	65	8	82	9	24	11	44	232
04:30 PM	5	102	12	119	6	22	12	40	10	45	4	59	9	13	10	32	250
04:45 PM	9	89	8	106	8	15	8	31	9	69	6	84	13	16	13	42	263
Total	23	332	41	396	29	82	34	145	38	235	23	296	39	66	47	152	989
05:00 PM	12	103	6	121	7	20	14	41	9	75	9	93	6	22	19	47	302
05:15 PM	6	86	12	104	9	28	7	44	15	71	14	100	9	10	12	31	279
05:30 PM	12	77	13	102	6	16	12	34	14	54	9	77	11	16	16	43	256
05:45 PM	3	76	9	88	6	38	14	58	11	62	6	79	8	16	7	31	256
Total	33	342	40	415	28	102	47	177	49	262	38	349	34	64	54	152	1093
Grand Total	56	674	81	811	57	184	81	322	87	497	61	645	73	130	101	304	2082
Apprch %	6.9	83.1	10		17.7	57.1	25.2		13.5	77.1	9.5		24	42.8	33.2		
Total %	2.7	32.4	3.9	39	2.7	8.8	3.9	15.5	4.2	23.9	2.9	31	3.5	6.2	4.9	14.6	

Start Time	Valencia Avenue Southbound				Golden Avenue Westbound				Valencia Avenue Northbound				Golden Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	9	89	8	106	8	15	8	31	9	69	6	84	13	16	13	42	263
05:00 PM	12	103	6	121	7	20	14	41	9	75	9	93	6	22	19	47	302
05:15 PM	6	86	12	104	9	28	7	44	15	71	14	100	9	10	12	31	279
05:30 PM	12	77	13	102	6	16	12	34	14	54	9	77	11	16	16	43	256
Total Volume	39	355	39	433	30	79	41	150	47	269	38	354	39	64	60	163	1100
% App. Total	9	82	9		20	52.7	27.3		13.3	76	10.7		23.9	39.3	36.8		
PHF	.813	.862	.750	.895	.833	.705	.732	.852	.783	.897	.679	.885	.750	.727	.789	.867	.911

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Golden Avenue  
 Weather: Clear

File Name : 02PLAVAGOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				04:45 PM				04:15 PM			
+0 mins.	5	102	<b>12</b>	119	7	20	<b>14</b>	41	9	69	6	84	9	<b>24</b>	11	44
+15 mins.	9	89	8	106	<b>9</b>	28	7	44	9	<b>75</b>	9	93	9	13	10	32
+30 mins.	<b>12</b>	<b>103</b>	6	<b>121</b>	6	16	12	34	<b>15</b>	71	<b>14</b>	<b>100</b>	<b>13</b>	16	13	42
+45 mins.	6	86	12	104	6	<b>38</b>	14	<b>58</b>	14	54	9	77	6	22	<b>19</b>	<b>47</b>
Total Volume	32	380	38	450	28	102	47	177	47	269	38	354	37	75	53	165
% App. Total	7.1	84.4	8.4		15.8	57.6	26.6		13.3	76	10.7		22.4	45.5	32.1	
PHF	.667	.922	.792	.930	.778	.671	.839	.763	.783	.897	.679	.885	.712	.781	.697	.878

City of Placentia  
 N/S: Rose Drive  
 E/W: Imperial Highway  
 Weather: Clear

File Name : 03PLAROIMAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

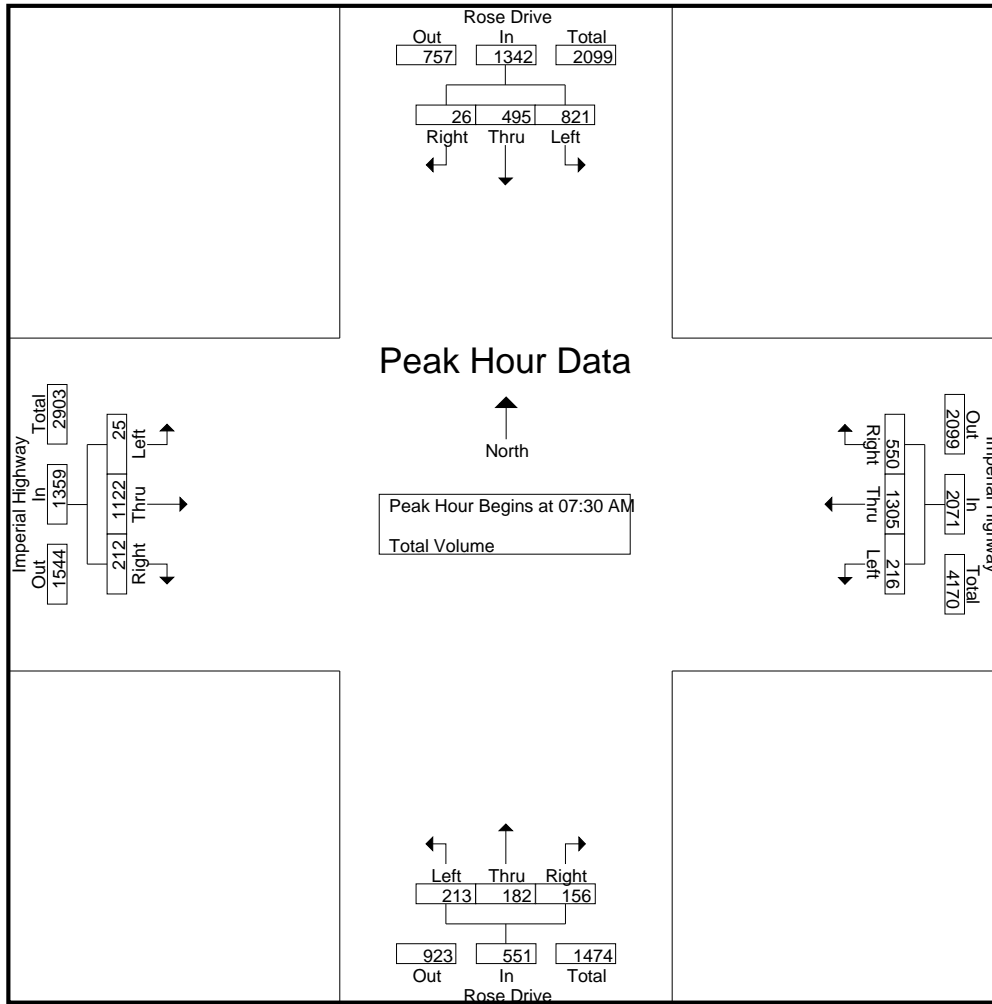
Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Imperial Highway Westbound				Rose Drive Northbound				Imperial Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	183	113	1	297	18	205	99	322	33	34	28	95	5	211	24	240	954
07:15 AM	198	120	5	323	38	233	122	393	35	35	21	91	8	297	43	348	1155
07:30 AM	192	134	3	329	86	327	133	546	46	35	42	123	7	282	44	333	1331
07:45 AM	210	99	6	315	48	311	136	495	57	51	56	164	7	349	69	425	1399
Total	783	466	15	1264	190	1076	490	1756	171	155	147	473	27	1139	180	1346	4839
08:00 AM	229	143	8	380	49	359	149	557	55	49	23	127	3	256	43	302	1366
08:15 AM	190	119	9	318	33	308	132	473	55	47	35	137	8	235	56	299	1227
08:30 AM	184	109	3	296	37	298	140	475	41	44	30	115	12	221	43	276	1162
08:45 AM	189	111	5	305	40	307	114	461	43	43	16	102	9	204	41	254	1122
Total	792	482	25	1299	159	1272	535	1966	194	183	104	481	32	916	183	1131	4877
Grand Total	1575	948	40	2563	349	2348	1025	3722	365	338	251	954	59	2055	363	2477	9716
Apprch %	61.5	37	1.6		9.4	63.1	27.5		38.3	35.4	26.3		2.4	83	14.7		
Total %	16.2	9.8	0.4	26.4	3.6	24.2	10.5	38.3	3.8	3.5	2.6	9.8	0.6	21.2	3.7	25.5	

Start Time	Rose Drive Southbound				Imperial Highway Westbound				Rose Drive Northbound				Imperial Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	192	134	3	329	<b>86</b>	327	133	546	46	35	42	123	7	282	44	333	1331
07:45 AM	210	99	6	315	48	311	136	495	<b>57</b>	<b>51</b>	<b>56</b>	<b>164</b>	7	<b>349</b>	<b>69</b>	<b>425</b>	<b>1399</b>
08:00 AM	<b>229</b>	<b>143</b>	8	<b>380</b>	49	<b>359</b>	<b>149</b>	<b>557</b>	55	49	23	127	3	256	43	302	1366
08:15 AM	190	119	<b>9</b>	318	33	308	132	473	55	47	35	137	<b>8</b>	235	56	299	1227
Total Volume	821	495	26	1342	216	1305	550	2071	213	182	156	551	25	1122	212	1359	5323
% App. Total	61.2	36.9	1.9		10.4	63	26.6		38.7	33	28.3		1.8	82.6	15.6		
PHF	.896	.865	.722	.883	.628	.909	.923	.930	.934	.892	.696	.840	.781	.804	.768	.799	.951

City of Placentia  
 N/S: Rose Drive  
 E/W: Imperial Highway  
 Weather: Clear

File Name : 03PLAROIMAM  
 Site Code : 22117718  
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	198	120	5	323	<b>86</b>	327	133	546	46	35	42	123	<b>8</b>	297	43	348
+15 mins.	192	134	3	329	48	311	136	495	<b>57</b>	<b>51</b>	<b>56</b>	<b>164</b>	7	282	44	333
+30 mins.	210	99	6	315	49	<b>359</b>	<b>149</b>	<b>557</b>	55	49	23	127	7	<b>349</b>	<b>69</b>	<b>425</b>
+45 mins.	<b>229</b>	<b>143</b>	<b>8</b>	<b>380</b>	33	308	132	473	55	47	35	137	3	256	43	302
Total Volume	829	496	22	1347	216	1305	550	2071	213	182	156	551	25	1184	199	1408
% App. Total	61.5	36.8	1.6		10.4	63	26.6		38.7	33	28.3		1.8	84.1	14.1	
PHF	.905	.867	.688	.886	.628	.909	.923	.930	.934	.892	.696	.840	.781	.848	.721	.828



City of Placentia  
 N/S: Rose Drive  
 E/W: Imperial Highway  
 Weather: Clear

File Name : 03PLAROIMPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

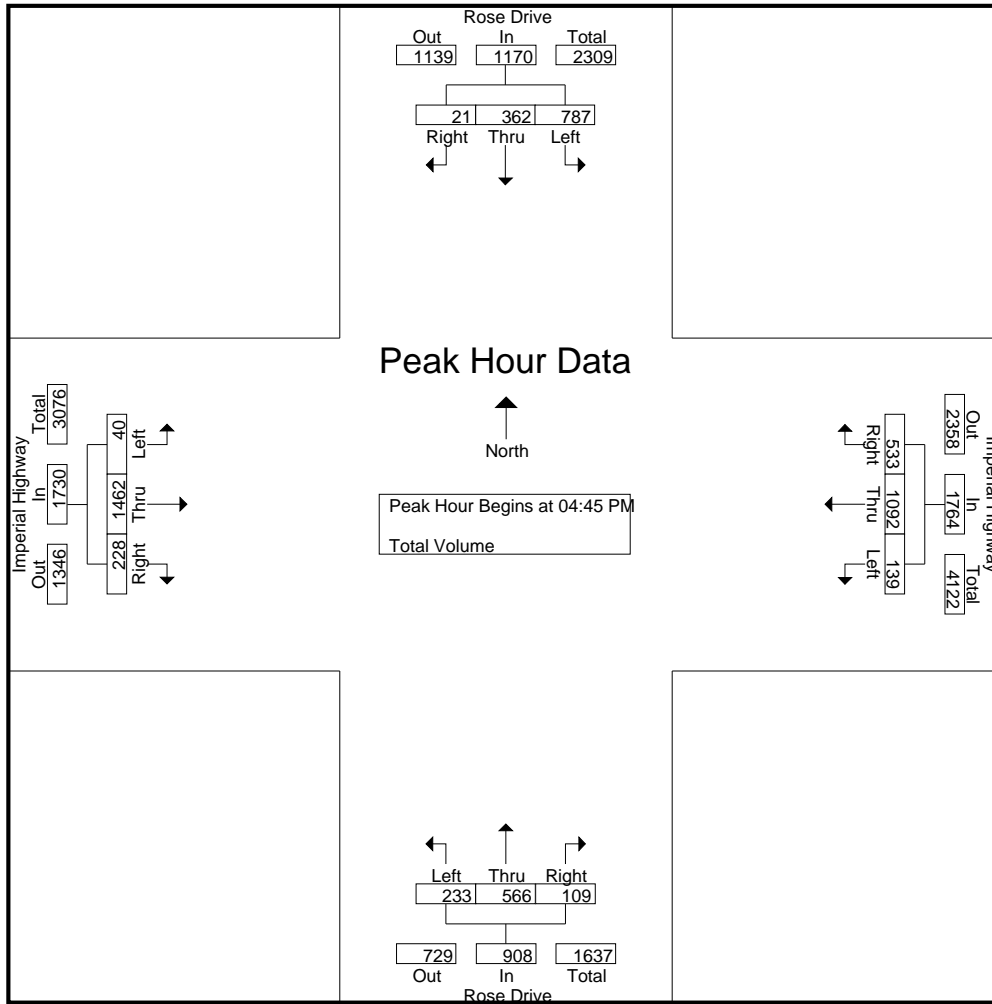
Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Imperial Highway Westbound				Rose Drive Northbound				Imperial Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	196	90	6	292	43	211	148	402	50	100	18	168	17	237	53	307	1169
04:15 PM	202	83	4	289	40	259	178	477	40	82	24	146	12	318	38	368	1280
04:30 PM	212	114	2	328	29	216	149	394	51	111	24	186	12	329	44	385	1293
04:45 PM	206	104	5	315	33	267	168	468	55	94	27	176	13	347	55	415	1374
Total	816	391	17	1224	145	953	643	1741	196	387	93	676	54	1231	190	1475	5116
05:00 PM	194	80	5	279	34	266	172	472	55	117	15	187	5	388	66	459	1397
05:15 PM	217	98	7	322	33	285	106	424	63	185	36	284	8	350	55	413	1443
05:30 PM	170	80	4	254	39	274	87	400	60	170	31	261	14	377	52	443	1358
05:45 PM	218	93	7	318	40	280	85	405	51	160	18	229	10	341	43	394	1346
Total	799	351	23	1173	146	1105	450	1701	229	632	100	961	37	1456	216	1709	5544
Grand Total	1615	742	40	2397	291	2058	1093	3442	425	1019	193	1637	91	2687	406	3184	10660
Apprch %	67.4	31	1.7		8.5	59.8	31.8		26	62.2	11.8		2.9	84.4	12.8		
Total %	15.2	7	0.4	22.5	2.7	19.3	10.3	32.3	4	9.6	1.8	15.4	0.9	25.2	3.8	29.9	

Start Time	Rose Drive Southbound				Imperial Highway Westbound				Rose Drive Northbound				Imperial Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	206	<b>104</b>	5	315	33	267	168	468	55	94	27	176	13	347	55	415	1374
05:00 PM	194	80	5	279	34	266	<b>172</b>	<b>472</b>	55	117	15	187	5	<b>388</b>	<b>66</b>	<b>459</b>	1397
05:15 PM	<b>217</b>	98	<b>7</b>	<b>322</b>	33	<b>285</b>	106	424	<b>63</b>	<b>185</b>	<b>36</b>	<b>284</b>	8	350	55	413	<b>1443</b>
05:30 PM	170	80	4	254	<b>39</b>	274	87	400	60	170	31	261	<b>14</b>	377	52	443	1358
Total Volume	787	362	21	1170	139	1092	533	1764	233	566	109	908	40	1462	228	1730	5572
% App. Total	67.3	30.9	1.8		7.9	61.9	30.2		25.7	62.3	12		2.3	84.5	13.2		
PHF	.907	.870	.750	.908	.891	.958	.775	.934	.925	.765	.757	.799	.714	.942	.864	.942	.965

City of Placentia  
 N/S: Rose Drive  
 E/W: Imperial Highway  
 Weather: Clear

File Name : 03PLAROIMPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				04:15 PM				05:00 PM				04:45 PM			
+0 mins.	212	<b>114</b>	2	<b>328</b>	<b>40</b>	259	<b>178</b>	<b>477</b>	55	117	15	187	13	347	55	415
+15 mins.	206	104	5	315	29	216	149	394	<b>63</b>	<b>185</b>	<b>36</b>	<b>284</b>	5	<b>388</b>	<b>66</b>	<b>459</b>
+30 mins.	194	80	5	279	33	<b>267</b>	168	468	60	170	31	261	8	350	55	413
+45 mins.	<b>217</b>	98	<b>7</b>	322	34	266	172	472	51	160	18	229	<b>14</b>	377	52	443
Total Volume	829	396	19	1244	136	1008	667	1811	229	632	100	961	40	1462	228	1730
% App. Total	66.6	31.8	1.5		7.5	55.7	36.8		23.8	65.8	10.4		2.3	84.5	13.2	
PHF	.955	.868	.679	.948	.850	.944	.937	.949	.909	.854	.694	.846	.714	.942	.864	.942

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 04PLAPLBAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

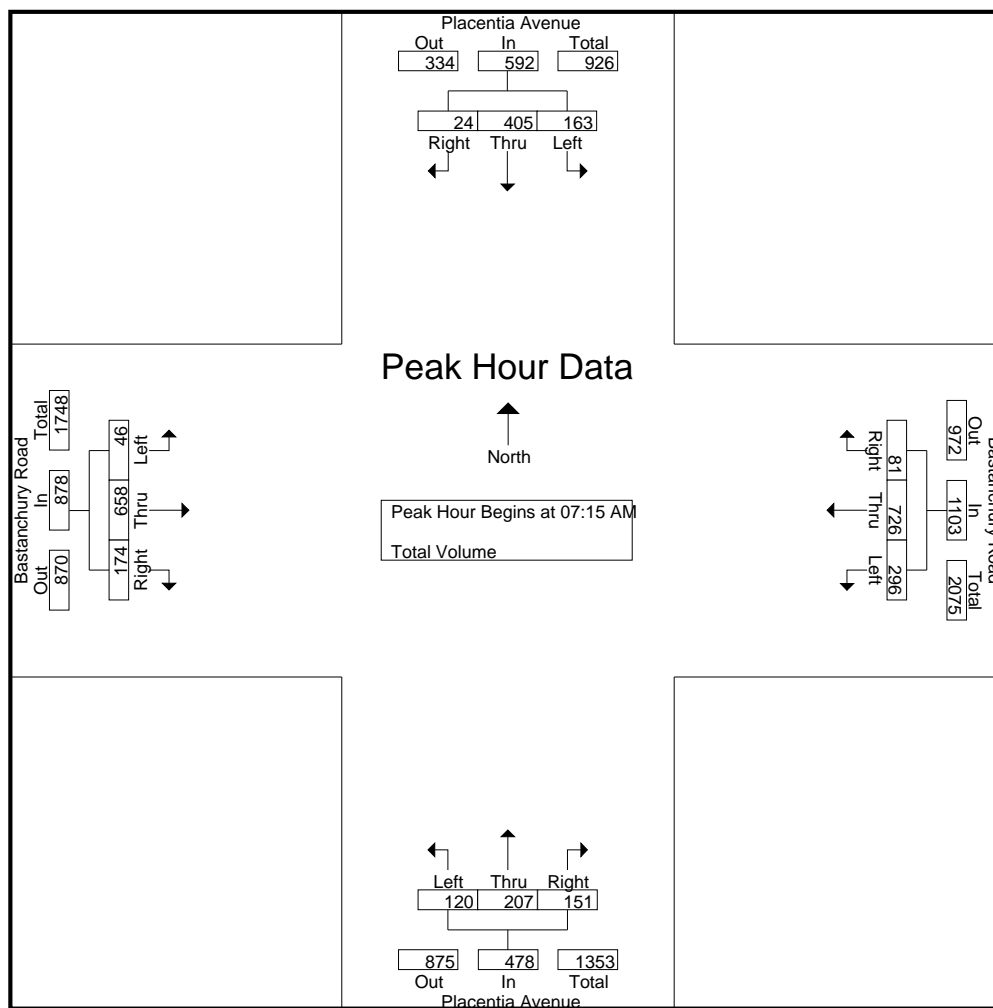
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Bastanchury Road Westbound				Placentia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	21	85	5	111	55	124	18	197	15	28	25	68	4	88	25	117	493
07:15 AM	47	102	3	152	73	166	18	257	28	31	32	91	6	146	26	178	678
07:30 AM	57	115	8	180	81	177	21	279	22	40	40	102	11	195	63	269	830
07:45 AM	32	100	4	136	80	195	33	308	49	88	47	184	22	152	56	230	858
Total	157	402	20	579	289	662	90	1041	114	187	144	445	43	581	170	794	2859
08:00 AM	27	88	9	124	62	188	9	259	21	48	32	101	7	165	29	201	685
08:15 AM	29	84	12	125	60	204	19	283	34	41	34	109	11	119	24	154	671
08:30 AM	42	63	4	109	72	144	22	238	27	46	40	113	8	118	29	155	615
08:45 AM	30	65	11	106	67	212	21	300	30	46	34	110	8	125	23	156	672
Total	128	300	36	464	261	748	71	1080	112	181	140	433	34	527	105	666	2643
Grand Total	285	702	56	1043	550	1410	161	2121	226	368	284	878	77	1108	275	1460	5502
Apprch %	27.3	67.3	5.4		25.9	66.5	7.6		25.7	41.9	32.3		5.3	75.9	18.8		
Total %	5.2	12.8	1	19	10	25.6	2.9	38.5	4.1	6.7	5.2	16	1.4	20.1	5	26.5	

Start Time	Placentia Avenue Southbound				Bastanchury Road Westbound				Placentia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	47	102	3	152	73	166	18	257	28	31	32	91	6	146	26	178	678
07:30 AM	57	115	8	180	81	177	21	279	22	40	40	102	11	195	63	269	830
07:45 AM	32	100	4	136	80	195	33	308	49	88	47	184	22	152	56	230	858
08:00 AM	27	88	9	124	62	188	9	259	21	48	32	101	7	165	29	201	685
Total Volume	163	405	24	592	296	726	81	1103	120	207	151	478	46	658	174	878	3051
% App. Total	27.5	68.4	4.1		26.8	65.8	7.3		25.1	43.3	31.6		5.2	74.9	19.8		
PHF	.715	.880	.667	.822	.914	.931	.614	.895	.612	.588	.803	.649	.523	.844	.690	.816	.889

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 04PLAPLBAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:45 AM				07:15 AM			
+0 mins.	47	102	3	152	<b>81</b>	177	21	279	<b>49</b>	<b>88</b>	<b>47</b>	<b>184</b>	6	146	26	178
+15 mins.	<b>57</b>	<b>115</b>	8	<b>180</b>	80	195	<b>33</b>	<b>308</b>	21	48	32	101	11	<b>195</b>	<b>63</b>	<b>269</b>
+30 mins.	32	100	4	136	62	188	9	259	34	41	34	109	<b>22</b>	152	56	230
+45 mins.	27	88	<b>9</b>	124	60	<b>204</b>	19	283	27	46	40	113	7	165	29	201
Total Volume	163	405	24	592	283	764	82	1129	131	223	153	507	46	658	174	878
% App. Total	27.5	68.4	4.1		25.1	67.7	7.3		25.8	44	30.2		5.2	74.9	19.8	
PHF	.715	.880	.667	.822	.873	.936	.621	.916	.668	.634	.814	.689	.523	.844	.690	.816

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 04PLAPLBAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

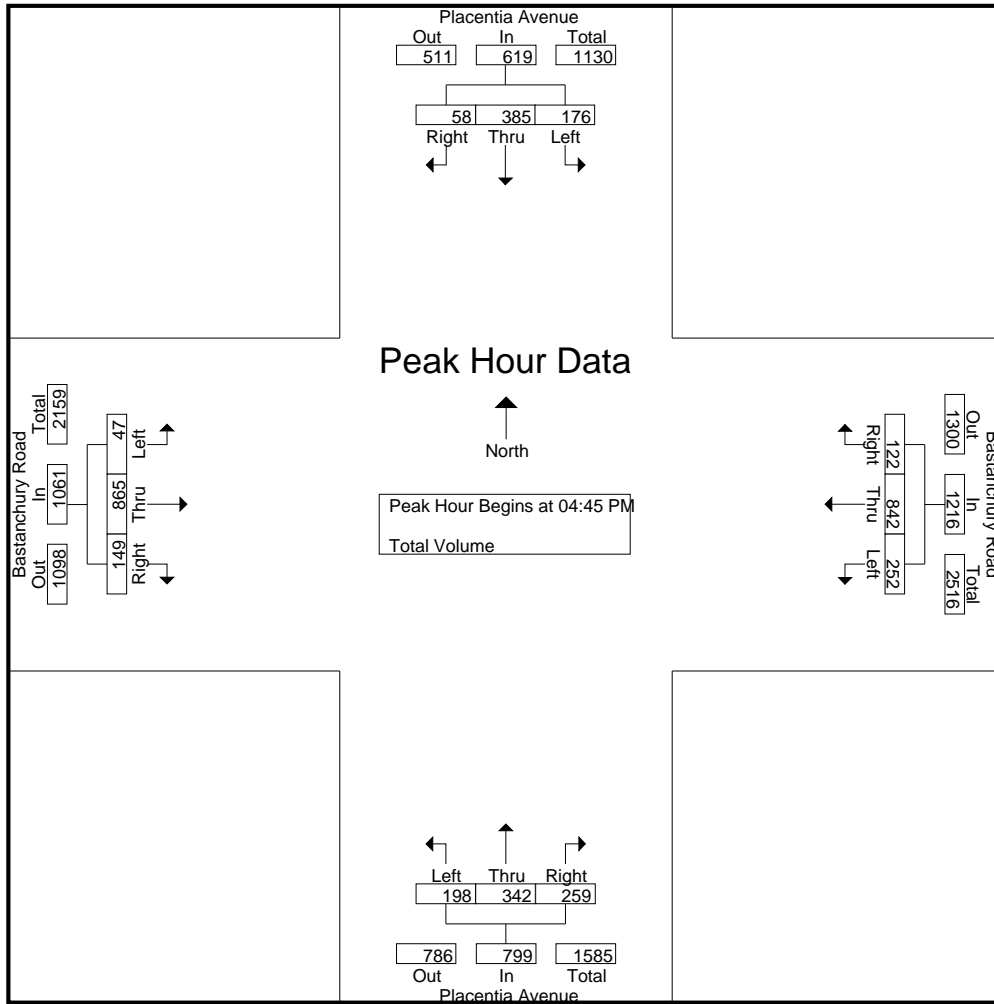
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Bastanchury Road Westbound				Placentia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	45	98	7	150	47	153	23	223	48	86	59	193	15	198	38	251	817
04:15 PM	42	76	13	131	70	168	18	256	54	79	59	192	7	191	44	242	821
04:30 PM	43	89	10	142	54	166	23	243	47	67	61	175	12	204	41	257	817
04:45 PM	46	101	10	157	63	214	23	300	54	77	69	200	12	232	25	269	926
Total	176	364	40	580	234	701	87	1022	203	309	248	760	46	825	148	1019	3381
05:00 PM	46	105	13	164	53	211	26	290	48	80	67	195	11	210	36	257	906
05:15 PM	46	94	21	161	64	191	44	299	52	105	57	214	8	213	45	266	940
05:30 PM	38	85	14	137	72	226	29	327	44	80	66	190	16	210	43	269	923
05:45 PM	38	87	20	145	49	189	26	264	45	90	74	209	12	211	45	268	886
Total	168	371	68	607	238	817	125	1180	189	355	264	808	47	844	169	1060	3655
Grand Total	344	735	108	1187	472	1518	212	2202	392	664	512	1568	93	1669	317	2079	7036
Apprch %	29	61.9	9.1		21.4	68.9	9.6		25	42.3	32.7		4.5	80.3	15.2		
Total %	4.9	10.4	1.5	16.9	6.7	21.6	3	31.3	5.6	9.4	7.3	22.3	1.3	23.7	4.5	29.5	

Start Time	Placentia Avenue Southbound				Bastanchury Road Westbound				Placentia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	<b>46</b>	101	10	157	63	214	23	300	<b>54</b>	77	<b>69</b>	200	12	<b>232</b>	25	<b>269</b>	926
05:00 PM	46	<b>105</b>	13	<b>164</b>	53	211	26	290	48	80	67	195	11	210	36	257	906
05:15 PM	46	94	<b>21</b>	161	64	191	<b>44</b>	299	52	<b>105</b>	57	<b>214</b>	8	213	<b>45</b>	266	<b>940</b>
05:30 PM	38	85	14	137	<b>72</b>	<b>226</b>	29	<b>327</b>	44	80	66	190	<b>16</b>	210	43	269	923
Total Volume	176	385	58	619	252	842	122	1216	198	342	259	799	47	865	149	1061	3695
% App. Total	28.4	62.2	9.4		20.7	69.2	10		24.8	42.8	32.4		4.4	81.5	14		
PHF	.957	.917	.690	.944	.875	.931	.693	.930	.917	.814	.938	.933	.734	.932	.828	.986	.983

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 04PLAPLBAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				05:00 PM				04:45 PM			
+0 mins.	43	89	10	142	63	214	23	300	48	80	67	195	12	<b>232</b>	25	<b>269</b>
+15 mins.	<b>46</b>	101	10	157	53	211	26	290	<b>52</b>	<b>105</b>	57	<b>214</b>	11	210	36	257
+30 mins.	46	<b>105</b>	13	<b>164</b>	64	191	<b>44</b>	299	44	80	66	190	8	213	<b>45</b>	266
+45 mins.	46	94	<b>21</b>	161	<b>72</b>	<b>226</b>	29	<b>327</b>	45	90	<b>74</b>	209	<b>16</b>	210	43	269
Total Volume	181	389	54	624	252	842	122	1216	189	355	264	808	47	865	149	1061
% App. Total	29	62.3	8.7		20.7	69.2	10		23.4	43.9	32.7		4.4	81.5	14	
PHF	.984	.926	.643	.951	.875	.931	.693	.930	.909	.845	.892	.944	.734	.932	.828	.986

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 05PLAKRBAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

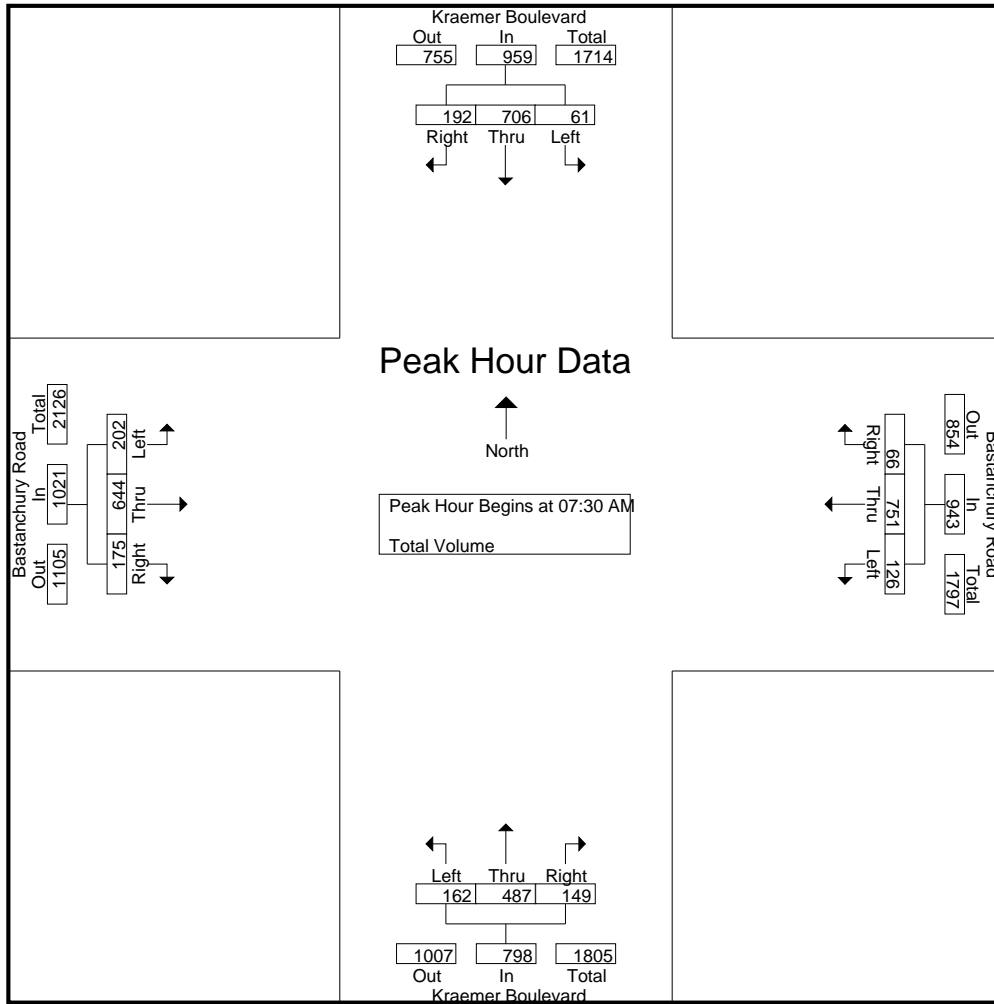
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Bastanchury Road Westbound				Kraemer Boulevard Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	5	144	38	187	34	127	9	170	16	40	11	67	25	77	39	141	565
07:15 AM	7	143	49	199	39	186	5	230	28	64	27	119	31	125	47	203	751
07:30 AM	27	204	43	274	43	185	12	240	48	116	63	227	30	231	46	307	1048
07:45 AM	12	174	47	233	39	219	27	285	51	148	62	261	77	172	40	289	1068
Total	51	665	177	893	155	717	53	925	143	368	163	674	163	605	172	940	3432
08:00 AM	9	158	55	222	22	175	12	209	25	112	14	151	48	132	55	235	817
08:15 AM	13	170	47	230	22	172	15	209	38	111	10	159	47	109	34	190	788
08:30 AM	13	184	60	257	30	165	16	211	36	143	6	185	37	103	41	181	834
08:45 AM	16	168	43	227	19	180	9	208	39	113	12	164	33	115	38	186	785
Total	51	680	205	936	93	692	52	837	138	479	42	659	165	459	168	792	3224
Grand Total	102	1345	382	1829	248	1409	105	1762	281	847	205	1333	328	1064	340	1732	6656
Apprch %	5.6	73.5	20.9		14.1	80	6		21.1	63.5	15.4		18.9	61.4	19.6		
Total %	1.5	20.2	5.7	27.5	3.7	21.2	1.6	26.5	4.2	12.7	3.1	20	4.9	16	5.1	26	

Start Time	Kraemer Boulevard Southbound				Bastanchury Road Westbound				Kraemer Boulevard Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	27	204	43	274	43	185	12	240	48	116	63	227	30	231	46	307	1048
07:45 AM	12	174	47	233	39	219	27	285	51	148	62	261	77	172	40	289	1068
08:00 AM	9	158	55	222	22	175	12	209	25	112	14	151	48	132	55	235	817
08:15 AM	13	170	47	230	22	172	15	209	38	111	10	159	47	109	34	190	788
Total Volume	61	706	192	959	126	751	66	943	162	487	149	798	202	644	175	1021	3721
% App. Total	6.4	73.6	20		13.4	79.6	7		20.3	61	18.7		19.8	63.1	17.1		
PHF	.565	.865	.873	.875	.733	.857	.611	.827	.794	.823	.591	.764	.656	.697	.795	.831	.871

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 05PLAKRBAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:30 AM				07:15 AM			
+0 mins.	<b>27</b>	<b>204</b>	43	<b>274</b>	39	186	5	230	48	116	<b>63</b>	227	31	125	47	203
+15 mins.	12	174	47	233	<b>43</b>	185	12	240	<b>51</b>	<b>148</b>	62	<b>261</b>	30	<b>231</b>	46	<b>307</b>
+30 mins.	9	158	<b>55</b>	222	39	<b>219</b>	<b>27</b>	<b>285</b>	25	112	14	151	<b>77</b>	172	40	289
+45 mins.	13	170	47	230	22	175	12	209	38	111	10	159	48	132	<b>55</b>	235
Total Volume	61	706	192	959	143	765	56	964	162	487	149	798	186	660	188	1034
% App. Total	6.4	73.6	20		14.8	79.4	5.8		20.3	61	18.7		18	63.8	18.2	
PHF	.565	.865	.873	.875	.831	.873	.519	.846	.794	.823	.591	.764	.604	.714	.855	.842



City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 05PLAKRBAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

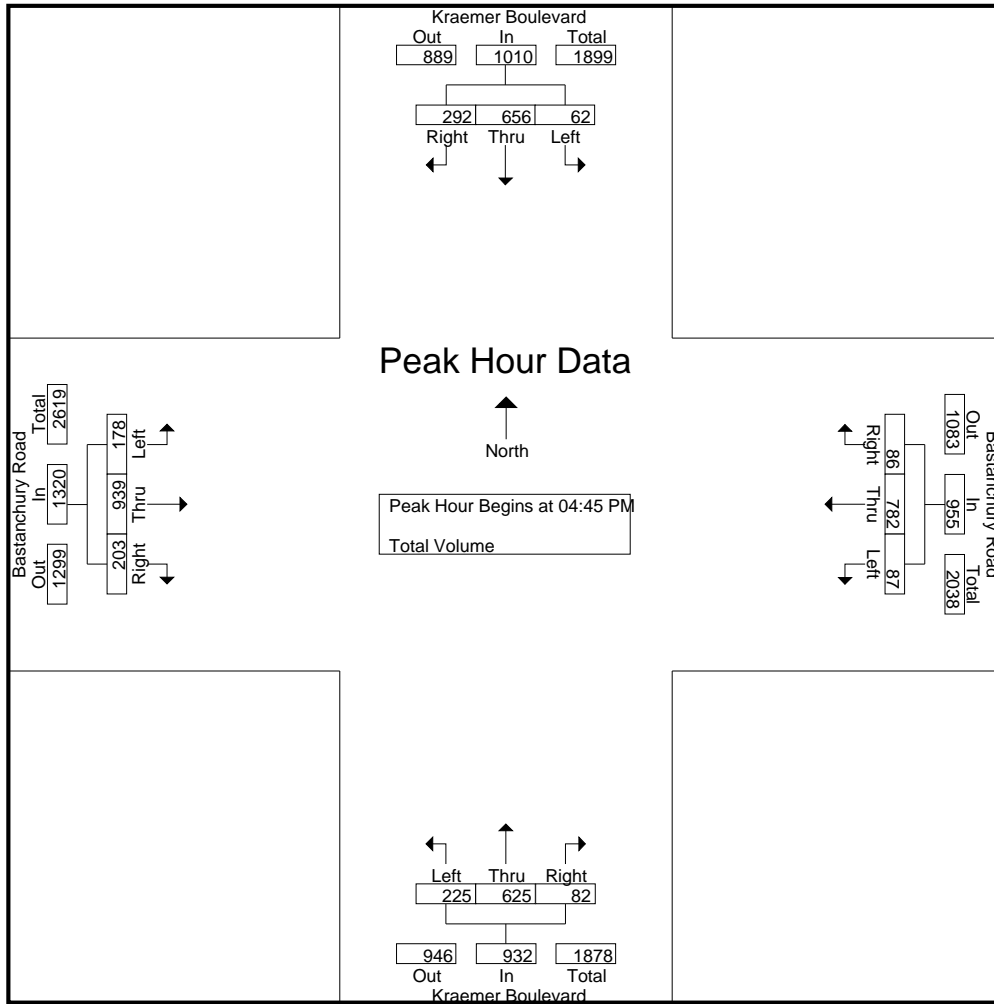
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Bastanchury Road Westbound				Kraemer Boulevard Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	10	153	59	222	23	153	11	187	33	131	18	182	46	199	40	285	876
04:15 PM	15	176	59	250	25	143	8	176	42	160	22	224	40	206	46	292	942
04:30 PM	16	199	85	300	23	125	12	160	53	134	26	213	50	205	36	291	964
04:45 PM	13	165	71	249	23	177	23	223	57	146	26	229	47	227	53	327	1028
Total	54	693	274	1021	94	598	54	746	185	571	92	848	183	837	175	1195	3810
05:00 PM	15	181	69	265	17	191	22	230	53	162	22	237	45	258	57	360	1092
05:15 PM	13	156	67	236	24	217	19	260	65	150	14	229	38	233	57	328	1053
05:30 PM	21	154	85	260	23	197	22	242	50	167	20	237	48	221	36	305	1044
05:45 PM	13	166	50	229	19	178	18	215	59	164	26	249	50	206	50	306	999
Total	62	657	271	990	83	783	81	947	227	643	82	952	181	918	200	1299	4188
Grand Total	116	1350	545	2011	177	1381	135	1693	412	1214	174	1800	364	1755	375	2494	7998
Apprch %	5.8	67.1	27.1		10.5	81.6	8		22.9	67.4	9.7		14.6	70.4	15		
Total %	1.5	16.9	6.8	25.1	2.2	17.3	1.7	21.2	5.2	15.2	2.2	22.5	4.6	21.9	4.7	31.2	

Start Time	Kraemer Boulevard Southbound				Bastanchury Road Westbound				Kraemer Boulevard Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	13	165	71	249	23	177	23	223	57	146	26	229	47	227	53	327	1028
05:00 PM	15	181	69	265	17	191	22	230	53	162	22	237	45	258	57	360	1092
05:15 PM	13	156	67	236	24	217	19	260	65	150	14	229	38	233	57	328	1053
05:30 PM	21	154	85	260	23	197	22	242	50	167	20	237	48	221	36	305	1044
Total Volume	62	656	292	1010	87	782	86	955	225	625	82	932	178	939	203	1320	4217
% App. Total	6.1	65	28.9		9.1	81.9	9		24.1	67.1	8.8		13.5	71.1	15.4		
PHF	.738	.906	.859	.953	.906	.901	.935	.918	.865	.936	.788	.983	.927	.910	.890	.917	.965

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 05PLAKRBAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				05:00 PM				04:45 PM			
+0 mins.	15	176	59	250	23	177	<b>23</b>	223	53	162	22	237	47	227	53	327
+15 mins.	<b>16</b>	<b>199</b>	<b>85</b>	<b>300</b>	17	191	22	230	<b>65</b>	150	14	229	45	<b>258</b>	<b>57</b>	<b>360</b>
+30 mins.	13	165	71	249	<b>24</b>	<b>217</b>	19	<b>260</b>	50	<b>167</b>	20	237	38	233	57	328
+45 mins.	15	181	69	265	23	197	22	242	59	164	<b>26</b>	<b>249</b>	<b>48</b>	221	36	305
Total Volume	59	721	284	1064	87	782	86	955	227	643	82	952	178	939	203	1320
% App. Total	5.5	67.8	26.7		9.1	81.9	9		23.8	67.5	8.6		13.5	71.1	15.4	
PHF	.922	.906	.835	.887	.906	.901	.935	.918	.873	.963	.788	.956	.927	.910	.890	.917

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 06PLAVABAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

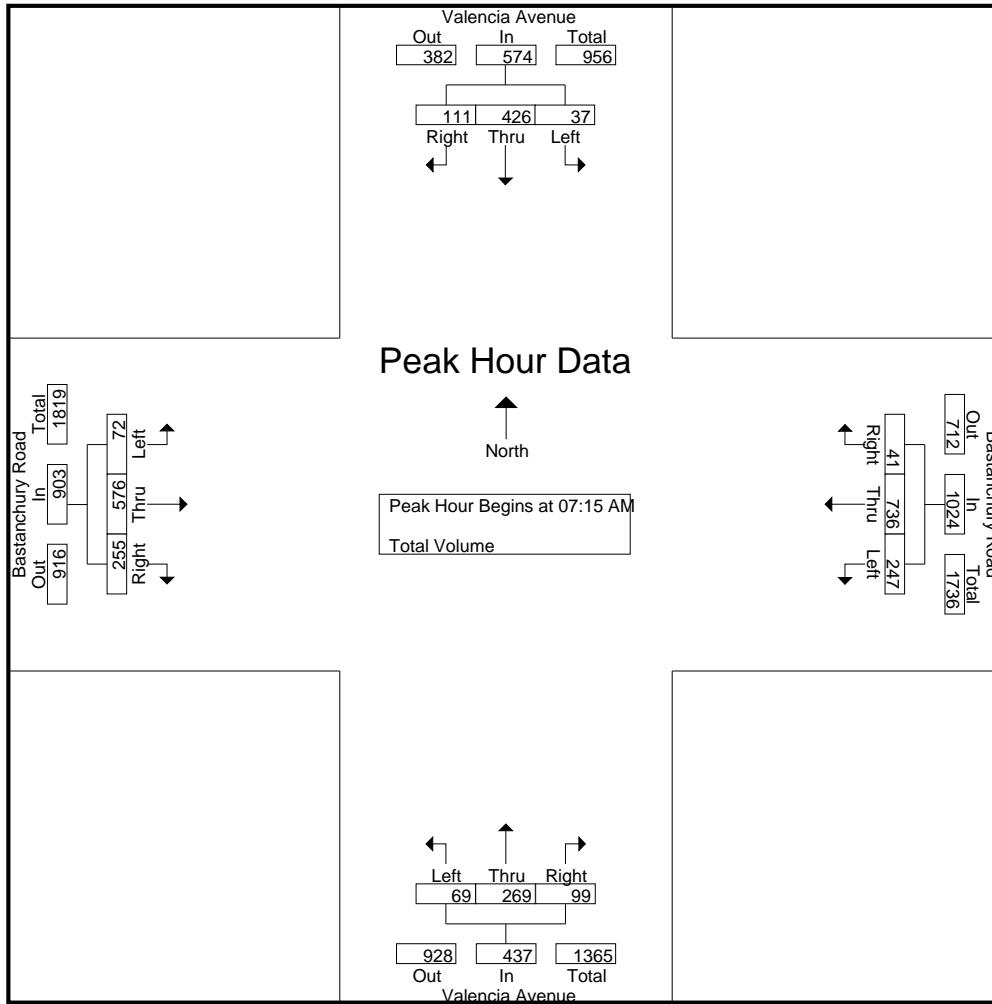
Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Bastanchury Road Westbound				Valencia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	7	63	19	89	6	113	3	122	10	23	8	41	15	65	16	96	348
07:15 AM	10	105	34	149	36	161	12	209	19	40	16	75	9	105	52	166	599
07:30 AM	13	157	32	202	110	186	12	308	17	90	36	143	18	133	107	258	911
07:45 AM	6	107	25	138	92	218	7	317	24	96	33	153	31	190	78	299	907
Total	36	432	110	578	244	678	34	956	70	249	93	412	73	493	253	819	2765
08:00 AM	8	57	20	85	9	171	10	190	9	43	14	66	14	148	18	180	521
08:15 AM	12	61	20	93	5	165	8	178	15	57	9	81	13	102	19	134	486
08:30 AM	10	71	24	105	1	174	13	188	14	35	11	60	17	91	23	131	484
08:45 AM	6	59	21	86	9	124	6	139	17	41	6	64	9	115	25	149	438
Total	36	248	85	369	24	634	37	695	55	176	40	271	53	456	85	594	1929
Grand Total	72	680	195	947	268	1312	71	1651	125	425	133	683	126	949	338	1413	4694
Apprch %	7.6	71.8	20.6		16.2	79.5	4.3		18.3	62.2	19.5		8.9	67.2	23.9		
Total %	1.5	14.5	4.2	20.2	5.7	28	1.5	35.2	2.7	9.1	2.8	14.6	2.7	20.2	7.2	30.1	

Start Time	Valencia Avenue Southbound				Bastanchury Road Westbound				Valencia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	10	105	<b>34</b>	149	36	161	<b>12</b>	209	19	40	16	75	9	105	52	166	599
07:30 AM	<b>13</b>	<b>157</b>	32	<b>202</b>	<b>110</b>	186	12	308	17	90	<b>36</b>	143	18	133	<b>107</b>	258	<b>911</b>
07:45 AM	6	107	25	138	92	<b>218</b>	7	<b>317</b>	<b>24</b>	<b>96</b>	33	<b>153</b>	<b>31</b>	<b>190</b>	78	<b>299</b>	907
08:00 AM	8	57	20	85	9	171	10	190	9	43	14	66	14	148	18	180	521
Total Volume	37	426	111	574	247	736	41	1024	69	269	99	437	72	576	255	903	2938
% App. Total	6.4	74.2	19.3		24.1	71.9	4		15.8	61.6	22.7		8	63.8	28.2		
PHF	.712	.678	.816	.710	.561	.844	.854	.808	.719	.701	.688	.714	.581	.758	.596	.755	.806

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 06PLAVABAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:30 AM				07:15 AM			
+0 mins.	7	63	19	89	36	161	<b>12</b>	209	17	90	<b>36</b>	143	9	105	52	166
+15 mins.	10	105	<b>34</b>	149	<b>110</b>	186	12	308	<b>24</b>	<b>96</b>	33	<b>153</b>	18	133	<b>107</b>	258
+30 mins.	<b>13</b>	<b>157</b>	32	<b>202</b>	92	<b>218</b>	7	<b>317</b>	9	43	14	66	<b>31</b>	<b>190</b>	78	<b>299</b>
+45 mins.	6	107	25	138	9	171	10	190	15	57	9	81	14	148	18	180
Total Volume	36	432	110	578	247	736	41	1024	65	286	92	443	72	576	255	903
% App. Total	6.2	74.7	19		24.1	71.9	4		14.7	64.6	20.8		8	63.8	28.2	
PHF	.692	.688	.809	.715	.561	.844	.854	.808	.677	.745	.639	.724	.581	.758	.596	.755

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 06PLAVABAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

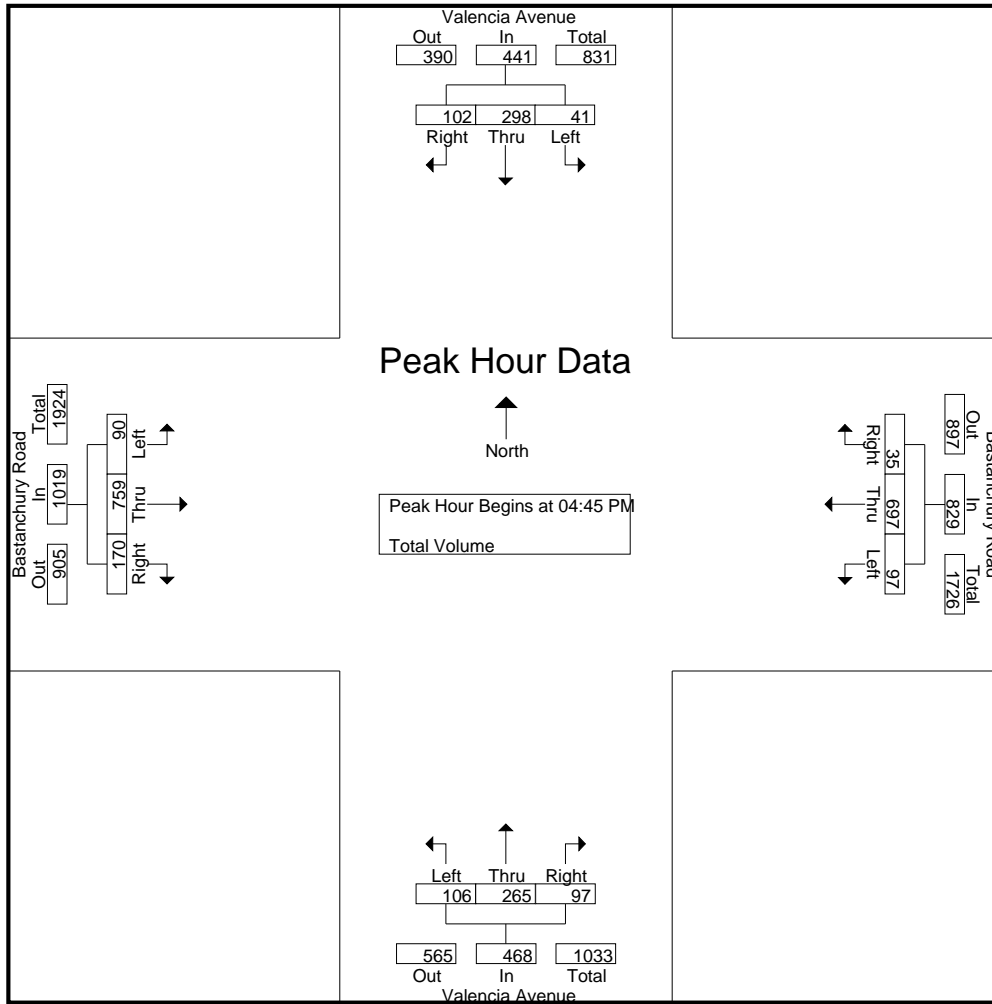
Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Bastanchury Road Westbound				Valencia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	10	72	32	114	14	118	7	139	29	63	11	103	19	168	26	213	569
04:15 PM	8	46	15	69	21	120	7	148	29	55	20	104	21	203	36	260	581
04:30 PM	8	90	20	118	16	140	4	160	12	45	9	66	18	200	40	258	602
04:45 PM	9	63	21	93	14	172	10	196	29	61	22	112	22	191	44	257	658
Total	35	271	88	394	65	550	28	643	99	224	62	385	80	762	146	988	2410
05:00 PM	6	96	31	133	37	178	8	223	33	70	33	136	19	190	66	275	767
05:15 PM	13	81	23	117	26	165	5	196	30	76	33	139	26	182	33	241	693
05:30 PM	13	58	27	98	20	182	12	214	14	58	9	81	23	196	27	246	639
05:45 PM	11	70	16	97	12	168	9	189	30	61	17	108	18	201	44	263	657
Total	43	305	97	445	95	693	34	822	107	265	92	464	86	769	170	1025	2756
Grand Total	78	576	185	839	160	1243	62	1465	206	489	154	849	166	1531	316	2013	5166
Apprch %	9.3	68.7	22.1		10.9	84.8	4.2		24.3	57.6	18.1		8.2	76.1	15.7		
Total %	1.5	11.1	3.6	16.2	3.1	24.1	1.2	28.4	4	9.5	3	16.4	3.2	29.6	6.1	39	

Start Time	Valencia Avenue Southbound				Bastanchury Road Westbound				Valencia Avenue Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	9	63	21	93	14	172	10	196	29	61	22	112	22	191	44	257	658
05:00 PM	6	96	31	133	37	178	8	223	33	70	33	136	19	190	66	275	767
05:15 PM	13	81	23	117	26	165	5	196	30	76	33	139	26	182	33	241	693
05:30 PM	13	58	27	98	20	182	12	214	14	58	9	81	23	196	27	246	639
Total Volume	41	298	102	441	97	697	35	829	106	265	97	468	90	759	170	1019	2757
% App. Total	9.3	67.6	23.1		11.7	84.1	4.2		22.6	56.6	20.7		8.8	74.5	16.7		
PHF	.788	.776	.823	.829	.655	.957	.729	.929	.803	.872	.735	.842	.865	.968	.644	.926	.899

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 06PLAVABAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:45 PM				04:15 PM			
+0 mins.	8	90	20	118	14	172	10	196	29	61	22	112	21	<b>203</b>	36	260
+15 mins.	9	63	21	93	<b>37</b>	178	8	<b>223</b>	<b>33</b>	70	<b>33</b>	136	18	200	40	258
+30 mins.	6	<b>96</b>	<b>31</b>	<b>133</b>	26	165	5	196	30	<b>76</b>	33	<b>139</b>	<b>22</b>	191	44	257
+45 mins.	<b>13</b>	81	23	117	20	<b>182</b>	<b>12</b>	214	14	58	9	81	19	190	<b>66</b>	<b>275</b>
Total Volume	36	330	95	461	97	697	35	829	106	265	97	468	80	784	186	1050
% App. Total	7.8	71.6	20.6		11.7	84.1	4.2		22.6	56.6	20.7		7.6	74.7	17.7	
PHF	.692	.859	.766	.867	.655	.957	.729	.929	.803	.872	.735	.842	.909	.966	.705	.955

City of Placentia  
 N/S: McCormack Lane  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 07PLAMCBAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

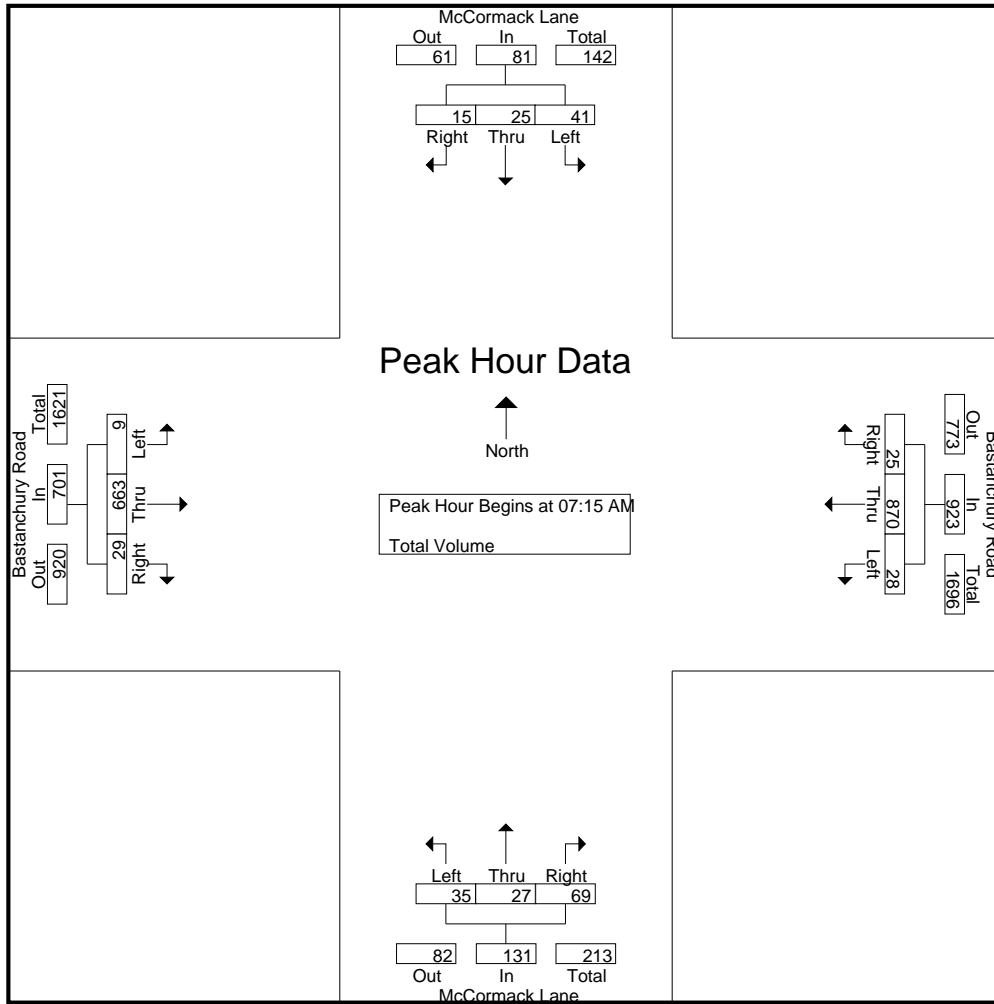
Groups Printed- Total Volume

Start Time	McCormack Lane Southbound				Bastanchury Road Westbound				McCormack Lane Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	2	0	5	1	120	1	122	3	0	6	9	1	86	0	87	223
07:15 AM	3	3	1	7	4	194	2	200	8	3	7	18	0	135	2	137	362
07:30 AM	10	3	4	17	5	290	15	310	16	6	19	41	3	162	6	171	539
07:45 AM	23	14	6	43	7	229	8	244	8	12	30	50	5	209	12	226	563
Total	39	22	11	72	17	833	26	876	35	21	62	118	9	592	20	621	1687
08:00 AM	5	5	4	14	12	157	0	169	3	6	13	22	1	157	9	167	372
08:15 AM	1	4	2	7	3	156	1	160	9	4	10	23	0	125	5	130	320
08:30 AM	2	3	2	7	5	170	0	175	12	5	10	27	2	100	6	108	317
08:45 AM	1	0	1	2	3	118	2	123	3	2	6	11	3	129	7	139	275
Total	9	12	9	30	23	601	3	627	27	17	39	83	6	511	27	544	1284
Grand Total	48	34	20	102	40	1434	29	1503	62	38	101	201	15	1103	47	1165	2971
Apprch %	47.1	33.3	19.6		2.7	95.4	1.9		30.8	18.9	50.2		1.3	94.7	4		
Total %	1.6	1.1	0.7	3.4	1.3	48.3	1	50.6	2.1	1.3	3.4	6.8	0.5	37.1	1.6	39.2	

Start Time	McCormack Lane Southbound				Bastanchury Road Westbound				McCormack Lane Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	3	3	1	7	4	194	2	200	8	3	7	18	0	135	2	137	362
07:30 AM	10	3	4	17	5	290	15	310	16	6	19	41	3	162	6	171	539
07:45 AM	23	14	6	43	7	229	8	244	8	12	30	50	5	209	12	226	563
08:00 AM	5	5	4	14	12	157	0	169	3	6	13	22	1	157	9	167	372
Total Volume	41	25	15	81	28	870	25	923	35	27	69	131	9	663	29	701	1836
% App. Total	50.6	30.9	18.5		3	94.3	2.7		26.7	20.6	52.7		1.3	94.6	4.1		
PHF	.446	.446	.625	.471	.583	.750	.417	.744	.547	.563	.575	.655	.450	.793	.604	.775	.815

City of Placentia  
 N/S: McCormack Lane  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 07PLAMCBAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:30 AM				07:15 AM			
+0 mins.	3	3	1	7	4	194	2	200	16	6	19	41	0	135	2	137
+15 mins.	10	3	4	17	5	<b>290</b>	15	<b>310</b>	8	<b>12</b>	<b>30</b>	<b>50</b>	3	162	6	171
+30 mins.	<b>23</b>	<b>14</b>	<b>6</b>	<b>43</b>	7	229	8	244	3	6	13	22	<b>5</b>	<b>209</b>	<b>12</b>	<b>226</b>
+45 mins.	5	5	4	14	<b>12</b>	157	0	169	9	4	10	23	1	157	9	167
Total Volume	41	25	15	81	28	870	25	923	36	28	72	136	9	663	29	701
% App. Total	50.6	30.9	18.5		3	94.3	2.7		26.5	20.6	52.9		1.3	94.6	4.1	
PHF	.446	.446	.625	.471	.583	.750	.417	.744	.563	.583	.600	.680	.450	.793	.604	.775



City of Placentia  
 N/S: McCormack Lane  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 07PLAMCBAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

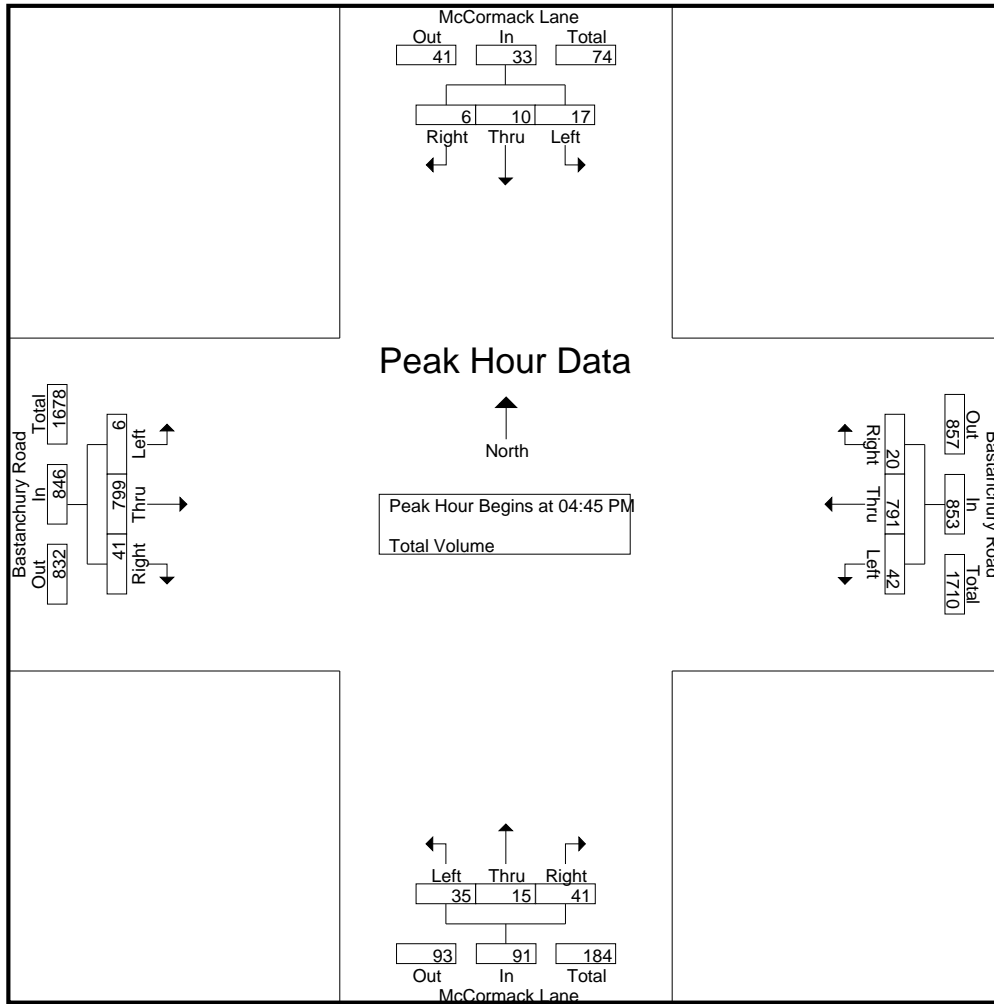
Groups Printed- Total Volume

Start Time	McCormack Lane Southbound				Bastanchury Road Westbound				McCormack Lane Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	2	5	1	8	10	137	6	153	5	4	5	14	2	172	6	180	355
04:15 PM	6	3	1	10	11	160	7	178	5	3	7	15	0	206	7	213	416
04:30 PM	2	4	1	7	10	133	5	148	2	6	8	16	4	199	8	211	382
04:45 PM	5	0	1	6	10	189	4	203	10	4	12	26	0	205	9	214	449
Total	15	12	4	31	41	619	22	682	22	17	32	71	6	782	30	818	1602
05:00 PM	5	5	1	11	12	205	3	220	12	4	10	26	4	200	12	216	473
05:15 PM	4	2	2	8	10	187	6	203	6	4	13	23	0	203	10	213	447
05:30 PM	3	3	2	8	10	210	7	227	7	3	6	16	2	191	10	203	454
05:45 PM	2	3	0	5	8	175	3	186	4	2	5	11	2	202	11	215	417
Total	14	13	5	32	40	777	19	836	29	13	34	76	8	796	43	847	1791
Grand Total	29	25	9	63	81	1396	41	1518	51	30	66	147	14	1578	73	1665	3393
Apprch %	46	39.7	14.3		5.3	92	2.7		34.7	20.4	44.9		0.8	94.8	4.4		
Total %	0.9	0.7	0.3	1.9	2.4	41.1	1.2	44.7	1.5	0.9	1.9	4.3	0.4	46.5	2.2	49.1	

Start Time	McCormack Lane Southbound				Bastanchury Road Westbound				McCormack Lane Northbound				Bastanchury Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	5	0	1	6	10	189	4	203	10	4	12	26	0	205	9	214	449
05:00 PM	5	5	1	11	12	205	3	220	12	4	10	26	4	200	12	216	473
05:15 PM	4	2	2	8	10	187	6	203	6	4	13	23	0	203	10	213	447
05:30 PM	3	3	2	8	10	210	7	227	7	3	6	16	2	191	10	203	454
Total Volume	17	10	6	33	42	791	20	853	35	15	41	91	6	799	41	846	1823
% App. Total	51.5	30.3	18.2		4.9	92.7	2.3		38.5	16.5	45.1		0.7	94.4	4.8		
PHF	.850	.500	.750	.750	.875	.942	.714	.939	.729	.938	.788	.875	.375	.974	.854	.979	.964

City of Placentia  
 N/S: McCormack Lane  
 E/W: Bastanchury Road  
 Weather: Clear

File Name : 07PLAMCBAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				04:30 PM				04:15 PM			
+0 mins.	6	3	1	10	10	189	4	203	2	6	8	16	0	206	7	213
+15 mins.	2	4	1	7	12	205	3	220	10	4	12	26	4	199	8	211
+30 mins.	5	0	1	6	10	187	6	203	12	4	10	26	0	205	9	214
+45 mins.	5	5	1	11	10	210	7	227	6	4	13	23	4	200	12	216
Total Volume	18	12	4	34	42	791	20	853	30	18	43	91	8	810	36	854
% App. Total	52.9	35.3	11.8		4.9	92.7	2.3		33	19.8	47.3		0.9	94.8	4.2	
PHF	.750	.600	1.000	.773	.875	.942	.714	.939	.625	.750	.827	.875	.500	.983	.750	.988

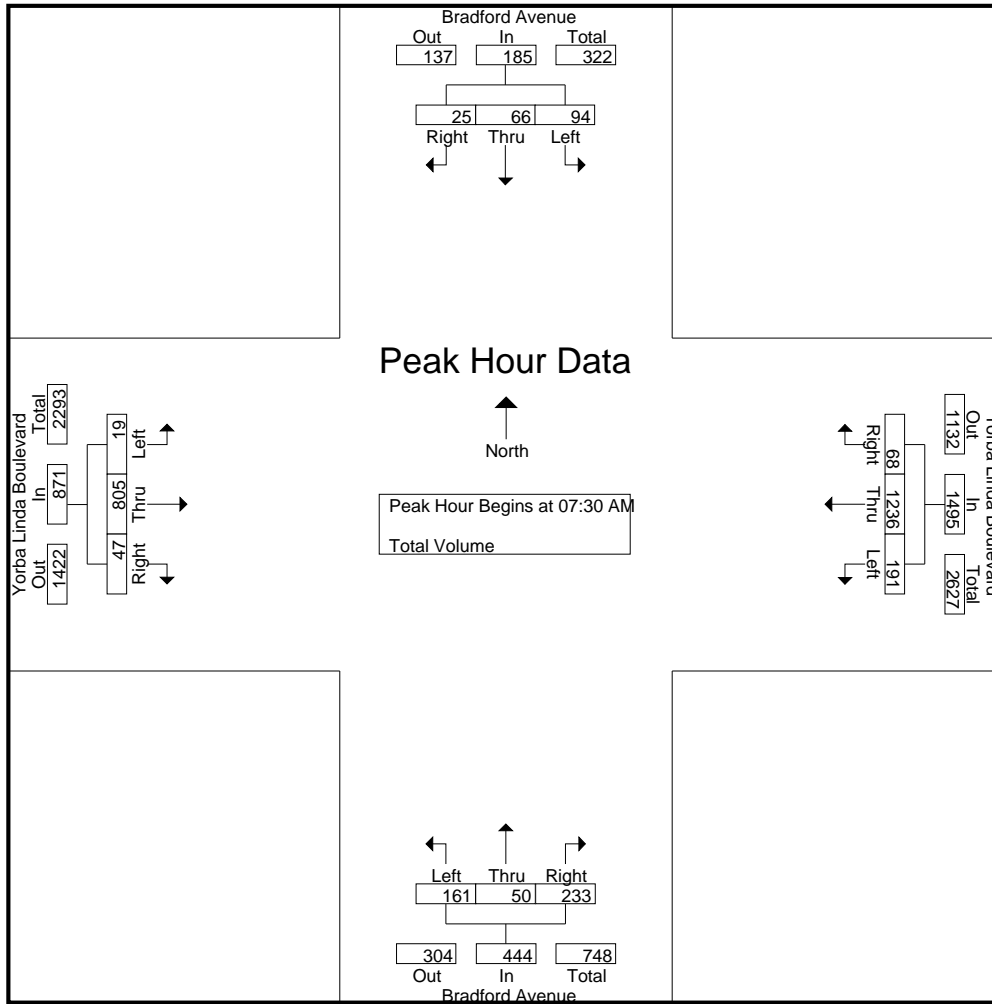
City of Placentia  
 N/S: Bradford Avenue  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 08PLABRYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Bradford Avenue Southbound				Yorba Linda Boulevard Westbound				Bradford Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	15	11	2	28	32	203	6	241	33	10	12	55	4	148	8	160	484
07:15 AM	18	15	1	34	44	249	6	299	33	8	35	76	3	181	7	191	600
07:30 AM	29	23	10	62	64	300	14	378	45	12	82	139	5	250	13	268	847
07:45 AM	33	15	7	55	50	372	37	459	45	21	78	144	3	213	10	226	884
Total	95	64	20	179	190	1124	63	1377	156	51	207	414	15	792	38	845	2815
08:00 AM	15	11	5	31	42	292	7	341	48	7	41	96	3	175	17	195	663
08:15 AM	17	17	3	37	35	272	10	317	23	10	32	65	8	167	7	182	601
08:30 AM	14	9	5	28	41	260	9	310	24	7	42	73	5	172	11	188	599
08:45 AM	11	11	4	26	33	245	11	289	39	17	39	95	4	185	19	208	618
Total	57	48	17	122	151	1069	37	1257	134	41	154	329	20	699	54	773	2481
Grand Total	152	112	37	301	341	2193	100	2634	290	92	361	743	35	1491	92	1618	5296
Apprch %	50.5	37.2	12.3		12.9	83.3	3.8		39	12.4	48.6		2.2	92.2	5.7		
Total %	2.9	2.1	0.7	5.7	6.4	41.4	1.9	49.7	5.5	1.7	6.8	14	0.7	28.2	1.7	30.6	

Start Time	Bradford Avenue Southbound				Yorba Linda Boulevard Westbound				Bradford Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	29	23	10	62	64	300	14	378	45	12	82	139	5	250	13	268	847
07:45 AM	33	15	7	55	50	372	37	459	45	21	78	144	3	213	10	226	884
08:00 AM	15	11	5	31	42	292	7	341	48	7	41	96	3	175	17	195	663
08:15 AM	17	17	3	37	35	272	10	317	23	10	32	65	8	167	7	182	601
Total Volume	94	66	25	185	191	1236	68	1495	161	50	233	444	19	805	47	871	2995
% App. Total	50.8	35.7	13.5		12.8	82.7	4.5		36.3	11.3	52.5		2.2	92.4	5.4		
PHF	.712	.717	.625	.746	.746	.831	.459	.814	.839	.595	.710	.771	.594	.805	.691	.813	.847



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:15 AM				07:15 AM			
+0 mins.	29	<b>23</b>	<b>10</b>	<b>62</b>	<b>64</b>	300	14	378	33	8	35	76	3	181	7	191
+15 mins.	<b>33</b>	15	7	55	50	<b>372</b>	<b>37</b>	<b>459</b>	45	12	<b>82</b>	139	<b>5</b>	<b>250</b>	13	<b>268</b>
+30 mins.	15	11	5	31	42	292	7	341	45	<b>21</b>	78	<b>144</b>	3	213	10	226
+45 mins.	17	17	3	37	35	272	10	317	<b>48</b>	7	41	96	3	175	<b>17</b>	195
Total Volume	94	66	25	185	191	1236	68	1495	171	48	236	455	14	819	47	880
% App. Total	50.8	35.7	13.5		12.8	82.7	4.5		37.6	10.5	51.9		1.6	93.1	5.3	
PHF	.712	.717	.625	.746	.746	.831	.459	.814	.891	.571	.720	.790	.700	.819	.691	.821

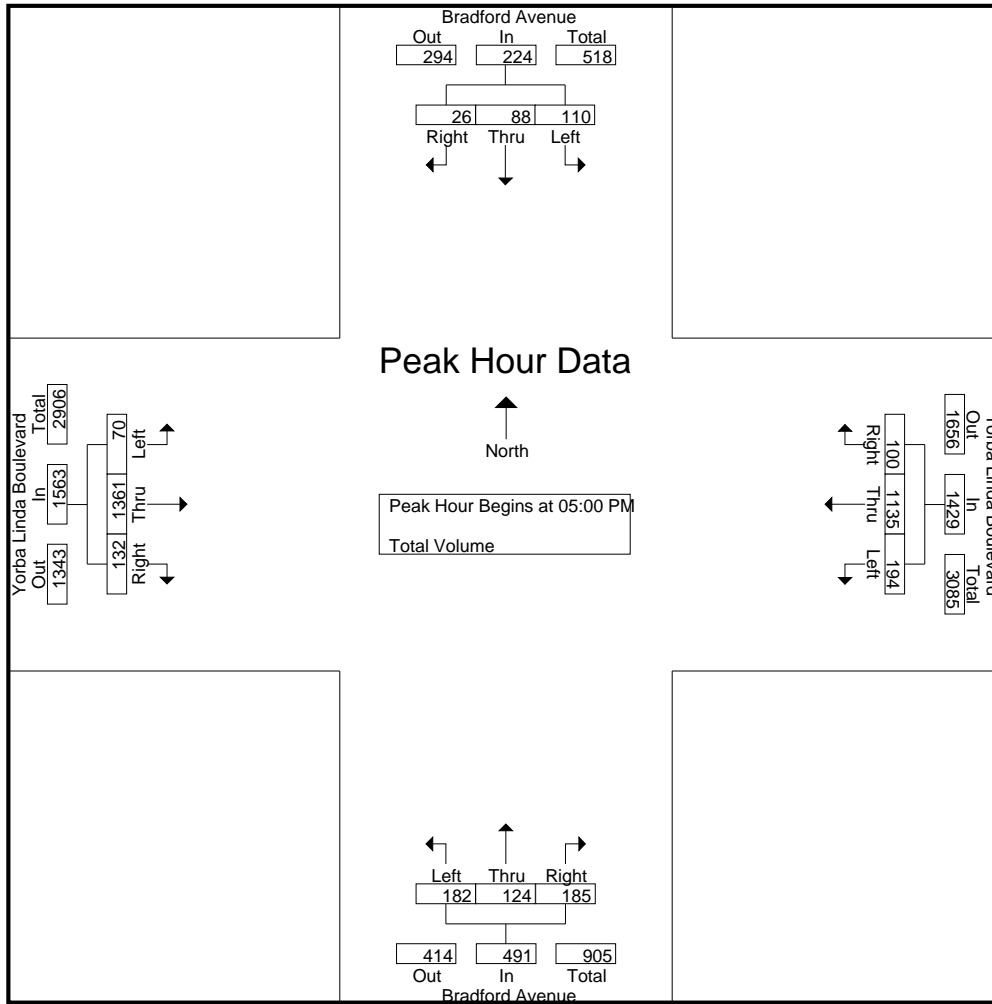
City of Placentia  
 N/S: Bradford Avenue  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 08PLABRYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Bradford Avenue Southbound				Yorba Linda Boulevard Westbound				Bradford Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	15	14	6	35	38	240	14	292	52	27	51	130	16	330	27	373	830
04:15 PM	24	22	13	59	49	258	17	324	37	25	53	115	13	319	27	359	857
04:30 PM	21	24	5	50	50	250	20	320	42	28	42	112	17	275	23	315	797
04:45 PM	21	15	6	42	42	250	22	314	45	29	45	119	16	329	23	368	843
Total	81	75	30	186	179	998	73	1250	176	109	191	476	62	1253	100	1415	3327
05:00 PM	22	23	2	47	46	303	25	374	43	23	63	129	17	337	32	386	936
05:15 PM	24	25	8	57	49	320	25	394	50	25	45	120	18	311	42	371	942
05:30 PM	37	23	5	65	49	272	25	346	44	38	37	119	22	371	33	426	956
05:45 PM	27	17	11	55	50	240	25	315	45	38	40	123	13	342	25	380	873
Total	110	88	26	224	194	1135	100	1429	182	124	185	491	70	1361	132	1563	3707
Grand Total	191	163	56	410	373	2133	173	2679	358	233	376	967	132	2614	232	2978	7034
Apprch %	46.6	39.8	13.7		13.9	79.6	6.5		37	24.1	38.9		4.4	87.8	7.8		
Total %	2.7	2.3	0.8	5.8	5.3	30.3	2.5	38.1	5.1	3.3	5.3	13.7	1.9	37.2	3.3	42.3	

Start Time	Bradford Avenue Southbound				Yorba Linda Boulevard Westbound				Bradford Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	22	23	2	47	46	303	<b>25</b>	374	43	23	<b>63</b>	<b>129</b>	17	337	32	386	936
05:15 PM	24	<b>25</b>	8	57	49	<b>320</b>	25	<b>394</b>	<b>50</b>	25	45	120	18	311	<b>42</b>	371	942
05:30 PM	<b>37</b>	23	5	<b>65</b>	49	272	25	346	44	<b>38</b>	37	119	<b>22</b>	<b>371</b>	33	<b>426</b>	<b>956</b>
05:45 PM	27	17	<b>11</b>	55	<b>50</b>	240	25	315	45	38	40	123	13	342	25	380	873
Total Volume	110	88	26	224	194	1135	100	1429	182	124	185	491	70	1361	132	1563	3707
% App. Total	49.1	39.3	11.6		13.6	79.4	7		37.1	25.3	37.7		4.5	87.1	8.4		
PHF	.743	.880	.591	.862	.970	.887	1.00	.907	.910	.816	.734	.952	.795	.917	.786	.917	.969



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	22	23	2	47	46	303	25	374	43	23	63	129	17	337	32	386
+15 mins.	24	25	8	57	49	320	25	394	50	25	45	120	18	311	42	371
+30 mins.	37	23	5	65	49	272	25	346	44	38	37	119	22	371	33	426
+45 mins.	27	17	11	55	50	240	25	315	45	38	40	123	13	342	25	380
Total Volume	110	88	26	224	194	1135	100	1429	182	124	185	491	70	1361	132	1563
% App. Total	49.1	39.3	11.6		13.6	79.4	7		37.1	25.3	37.7		4.5	87.1	8.4	
PHF	.743	.880	.591	.862	.970	.887	1.000	.907	.910	.816	.734	.952	.795	.917	.786	.917

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 09PLAKRYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

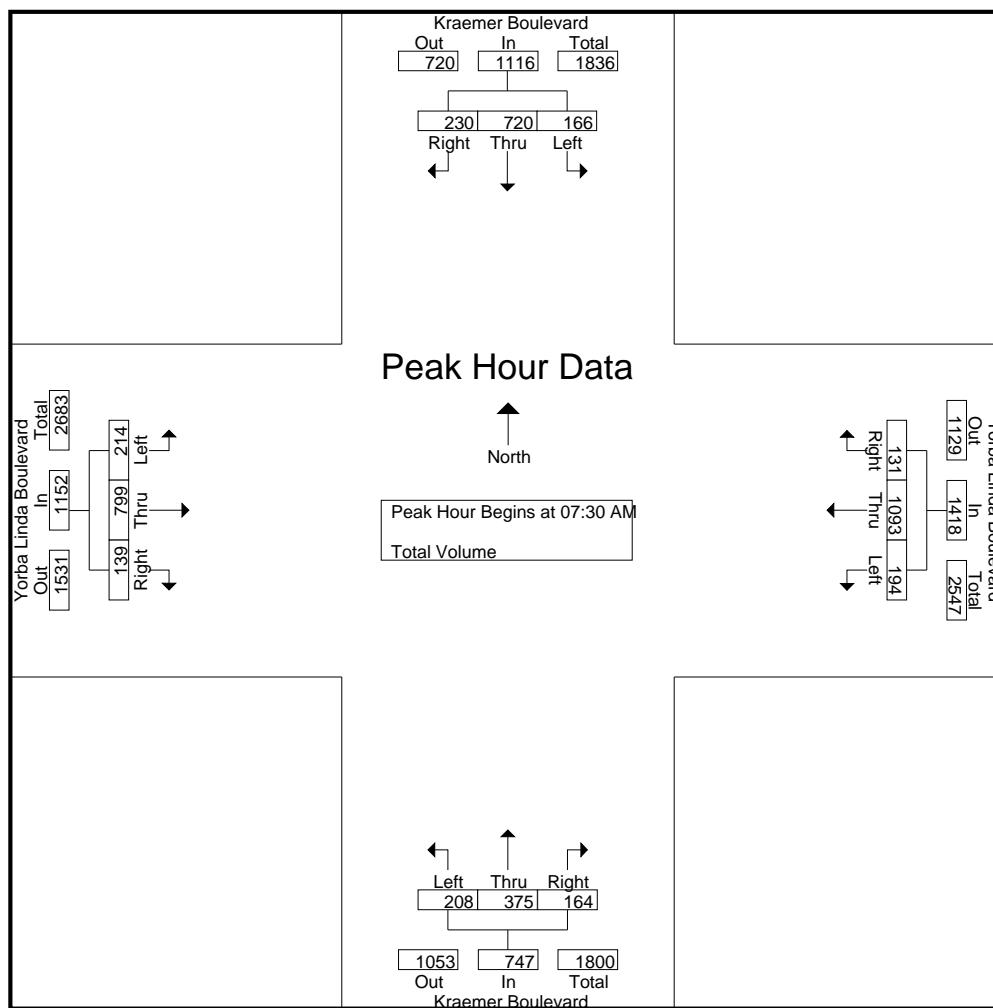
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Yorba Linda Boulevard Westbound				Kraemer Boulevard Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	20	151	38	209	25	170	12	207	43	43	24	110	22	130	30	182	708
07:15 AM	26	180	24	230	35	239	15	289	37	65	32	134	37	174	32	243	896
07:30 AM	37	242	59	338	47	307	34	388	51	138	61	250	56	249	24	329	1305
07:45 AM	51	185	67	303	53	331	49	433	57	98	41	196	63	241	43	347	1279
Total	134	758	188	1080	160	1047	110	1317	188	344	158	690	178	794	129	1101	4188
08:00 AM	39	150	50	239	50	231	27	308	47	64	33	144	49	154	45	248	939
08:15 AM	39	143	54	236	44	224	21	289	53	75	29	157	46	155	27	228	910
08:30 AM	30	161	56	247	35	200	29	264	49	93	18	160	61	136	24	221	892
08:45 AM	37	148	58	243	29	177	22	228	48	89	24	161	52	166	23	241	873
Total	145	602	218	965	158	832	99	1089	197	321	104	622	208	611	119	938	3614
Grand Total	279	1360	406	2045	318	1879	209	2406	385	665	262	1312	386	1405	248	2039	7802
Apprch %	13.6	66.5	19.9		13.2	78.1	8.7		29.3	50.7	20		18.9	68.9	12.2		
Total %	3.6	17.4	5.2	26.2	4.1	24.1	2.7	30.8	4.9	8.5	3.4	16.8	4.9	18	3.2	26.1	

Start Time	Kraemer Boulevard Southbound				Yorba Linda Boulevard Westbound				Kraemer Boulevard Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	37	<b>242</b>	59	<b>338</b>	47	307	34	388	51	<b>138</b>	<b>61</b>	<b>250</b>	56	<b>249</b>	24	329	<b>1305</b>
07:45 AM	<b>51</b>	185	<b>67</b>	303	<b>53</b>	<b>331</b>	<b>49</b>	<b>433</b>	<b>57</b>	98	41	196	<b>63</b>	241	43	<b>347</b>	1279
08:00 AM	39	150	50	239	50	231	27	308	47	64	33	144	49	154	<b>45</b>	248	939
08:15 AM	39	143	54	236	44	224	21	289	53	75	29	157	46	155	27	228	910
Total Volume	166	720	230	1116	194	1093	131	1418	208	375	164	747	214	799	139	1152	4433
% App. Total	14.9	64.5	20.6		13.7	77.1	9.2		27.8	50.2	22		18.6	69.4	12.1		
PHF	.814	.744	.858	.825	.915	.826	.668	.819	.912	.679	.672	.747	.849	.802	.772	.830	.849

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 09PLAKRYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:30 AM				07:15 AM			
+0 mins.	37	<b>242</b>	59	<b>338</b>	35	239	15	289	51	<b>138</b>	<b>61</b>	<b>250</b>	37	174	32	243
+15 mins.	<b>51</b>	185	<b>67</b>	303	47	307	34	388	<b>57</b>	98	41	196	56	<b>249</b>	24	329
+30 mins.	39	150	50	239	<b>53</b>	<b>331</b>	<b>49</b>	<b>433</b>	47	64	33	144	<b>63</b>	241	43	<b>347</b>
+45 mins.	39	143	54	236	50	231	27	308	53	75	29	157	49	154	<b>45</b>	248
Total Volume	166	720	230	1116	185	1108	125	1418	208	375	164	747	205	818	144	1167
% App. Total	14.9	64.5	20.6		13	78.1	8.8		27.8	50.2	22		17.6	70.1	12.3	
PHF	.814	.744	.858	.825	.873	.837	.638	.819	.912	.679	.672	.747	.813	.821	.800	.841



City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 09PLAKRYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

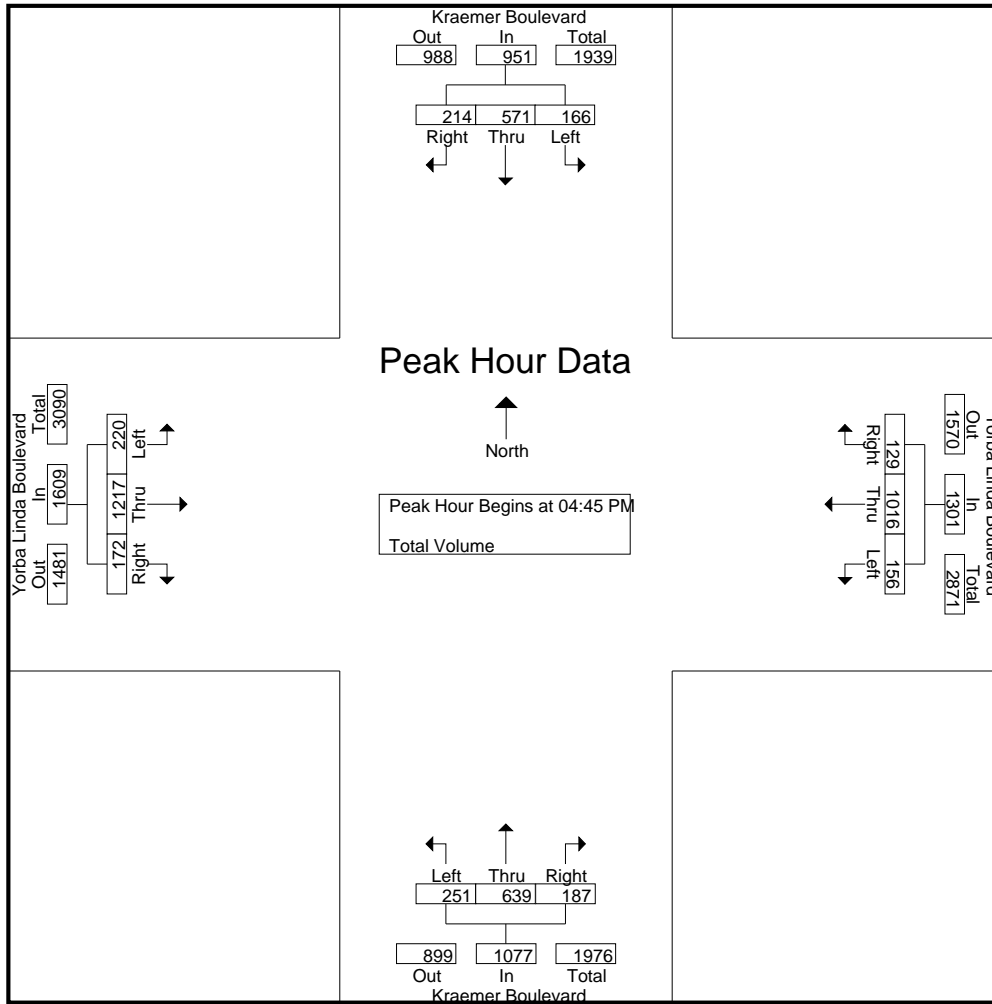
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Yorba Linda Boulevard Westbound				Kraemer Boulevard Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	44	126	55	225	37	208	28	273	58	131	45	234	48	287	39	374	1106
04:15 PM	42	167	47	256	35	223	24	282	65	161	44	270	52	285	43	380	1188
04:30 PM	45	141	52	238	29	222	28	279	51	126	56	233	54	236	42	332	1082
04:45 PM	48	163	46	257	29	222	34	285	65	149	43	257	53	283	43	379	1178
Total	179	597	200	976	130	875	114	1119	239	567	188	994	207	1091	167	1465	4554
05:00 PM	47	150	48	245	38	268	37	343	59	161	52	272	51	317	44	412	1272
05:15 PM	36	132	59	227	47	287	31	365	67	164	41	272	67	279	44	390	1254
05:30 PM	35	126	61	222	42	239	27	308	60	165	51	276	49	338	41	428	1234
05:45 PM	41	144	43	228	19	220	30	269	59	149	44	252	49	312	42	403	1152
Total	159	552	211	922	146	1014	125	1285	245	639	188	1072	216	1246	171	1633	4912
Grand Total	338	1149	411	1898	276	1889	239	2404	484	1206	376	2066	423	2337	338	3098	9466
Apprch %	17.8	60.5	21.7		11.5	78.6	9.9		23.4	58.4	18.2		13.7	75.4	10.9		
Total %	3.6	12.1	4.3	20.1	2.9	20	2.5	25.4	5.1	12.7	4	21.8	4.5	24.7	3.6	32.7	

Start Time	Kraemer Boulevard Southbound				Yorba Linda Boulevard Westbound				Kraemer Boulevard Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	48	163	46	257	29	222	34	285	65	149	43	257	53	283	43	379	1178
05:00 PM	47	150	48	245	38	268	37	343	59	161	52	272	51	317	44	412	1272
05:15 PM	36	132	59	227	47	287	31	365	67	164	41	272	67	279	44	390	1254
05:30 PM	35	126	61	222	42	239	27	308	60	165	51	276	49	338	41	428	1234
Total Volume	166	571	214	951	156	1016	129	1301	251	639	187	1077	220	1217	172	1609	4938
% App. Total	17.5	60	22.5		12	78.1	9.9		23.3	59.3	17.4		13.7	75.6	10.7		
PHF	.865	.876	.877	.925	.830	.885	.872	.891	.937	.968	.899	.976	.821	.900	.977	.940	.971

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 09PLAKRYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				04:45 PM				05:00 PM			
+0 mins.	42	<b>167</b>	47	256	29	222	34	285	65	149	43	257	51	317	<b>44</b>	412
+15 mins.	45	141	<b>52</b>	238	38	268	<b>37</b>	343	59	161	<b>52</b>	272	<b>67</b>	279	44	390
+30 mins.	<b>48</b>	163	46	<b>257</b>	<b>47</b>	<b>287</b>	31	<b>365</b>	<b>67</b>	164	41	272	49	<b>338</b>	41	<b>428</b>
+45 mins.	47	150	48	245	42	239	27	308	60	<b>165</b>	51	<b>276</b>	49	312	42	403
Total Volume	182	621	193	996	156	1016	129	1301	251	639	187	1077	216	1246	171	1633
% App. Total	18.3	62.3	19.4		12	78.1	9.9		23.3	59.3	17.4		13.2	76.3	10.5	
PHF	.948	.930	.928	.969	.830	.885	.872	.891	.937	.968	.899	.976	.806	.922	.972	.954

City of Placentia  
 N/S: Palm Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 10PLAPAYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

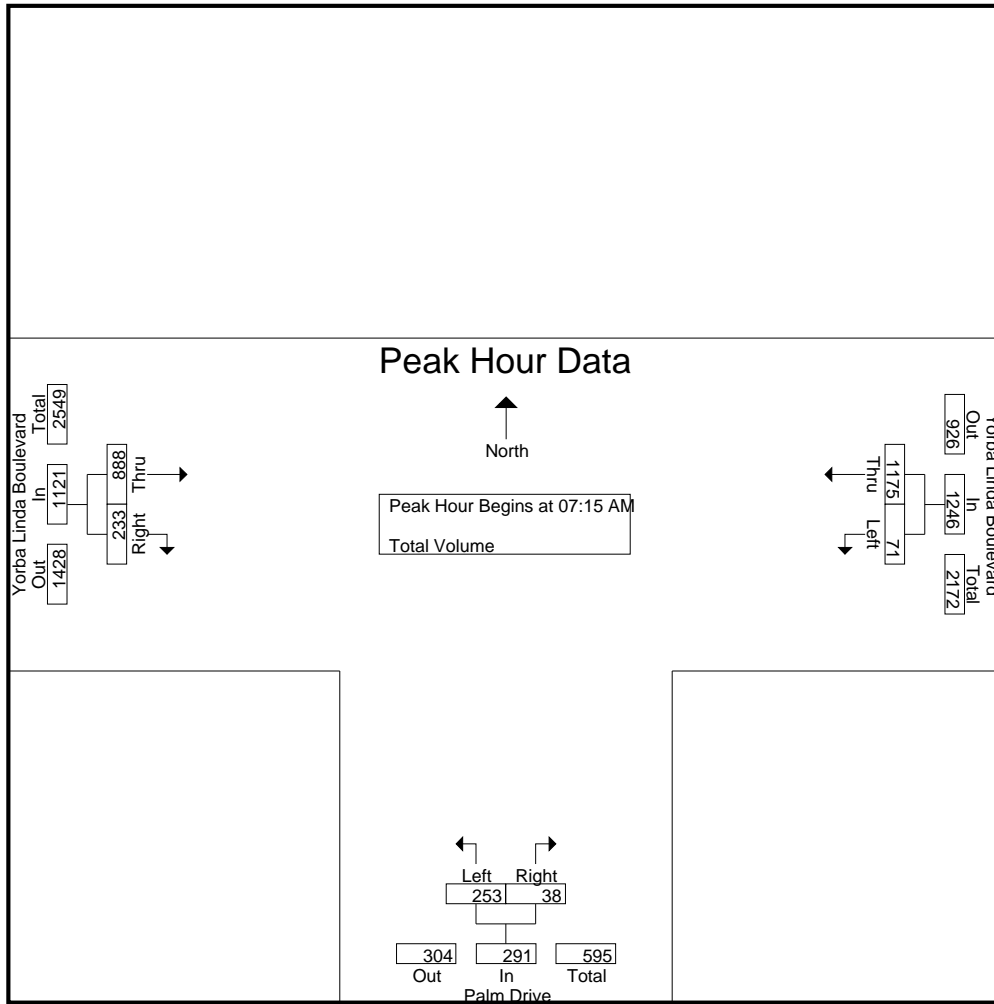
Start Time	Yorba Linda Boulevard Westbound			Palm Drive Northbound			Yorba Linda Boulevard Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	8	167	175	42	6	48	141	38	179	402
07:15 AM	8	236	244	56	4	60	179	46	225	529
07:30 AM	15	326	341	71	10	81	288	56	344	766
07:45 AM	29	384	413	71	18	89	250	79	329	831
Total	60	1113	1173	240	38	278	858	219	1077	2528
08:00 AM	19	229	248	55	6	61	171	52	223	532
08:15 AM	9	232	241	66	3	69	168	50	218	528
08:30 AM	9	207	216	54	4	58	133	46	179	453
08:45 AM	14	168	182	61	4	65	185	51	236	483
Total	51	836	887	236	17	253	657	199	856	1996
Grand Total	111	1949	2060	476	55	531	1515	418	1933	4524
Apprch %	5.4	94.6		89.6	10.4		78.4	21.6		
Total %	2.5	43.1	45.5	10.5	1.2	11.7	33.5	9.2	42.7	

Start Time	Yorba Linda Boulevard Westbound			Palm Drive Northbound			Yorba Linda Boulevard Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:15 AM	8	236	244	56	4	60	179	46	225	529
07:30 AM	15	326	341	71	10	81	288	56	344	766
07:45 AM	29	384	413	71	18	89	250	79	329	831
08:00 AM	19	229	248	55	6	61	171	52	223	532
Total Volume	71	1175	1246	253	38	291	888	233	1121	2658
% App. Total	5.7	94.3		86.9	13.1		79.2	20.8		
PHF	.612	.765	.754	.891	.528	.817	.771	.737	.815	.800

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:15 AM

City of Placentia  
 N/S: Palm Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 10PLAPAYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:30 AM			07:15 AM		
+0 mins.	8	236	244	71	10	81	179	46	225
+15 mins.	15	326	341	71	18	89	288	56	344
+30 mins.	29	384	413	55	6	61	250	79	329
+45 mins.	19	229	248	66	3	69	171	52	223
Total Volume	71	1175	1246	263	37	300	888	233	1121
% App. Total	5.7	94.3		87.7	12.3		79.2	20.8	
PHF	.612	.765	.754	.926	.514	.843	.771	.737	.815

City of Placentia  
 N/S: Palm Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 10PLAPAYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

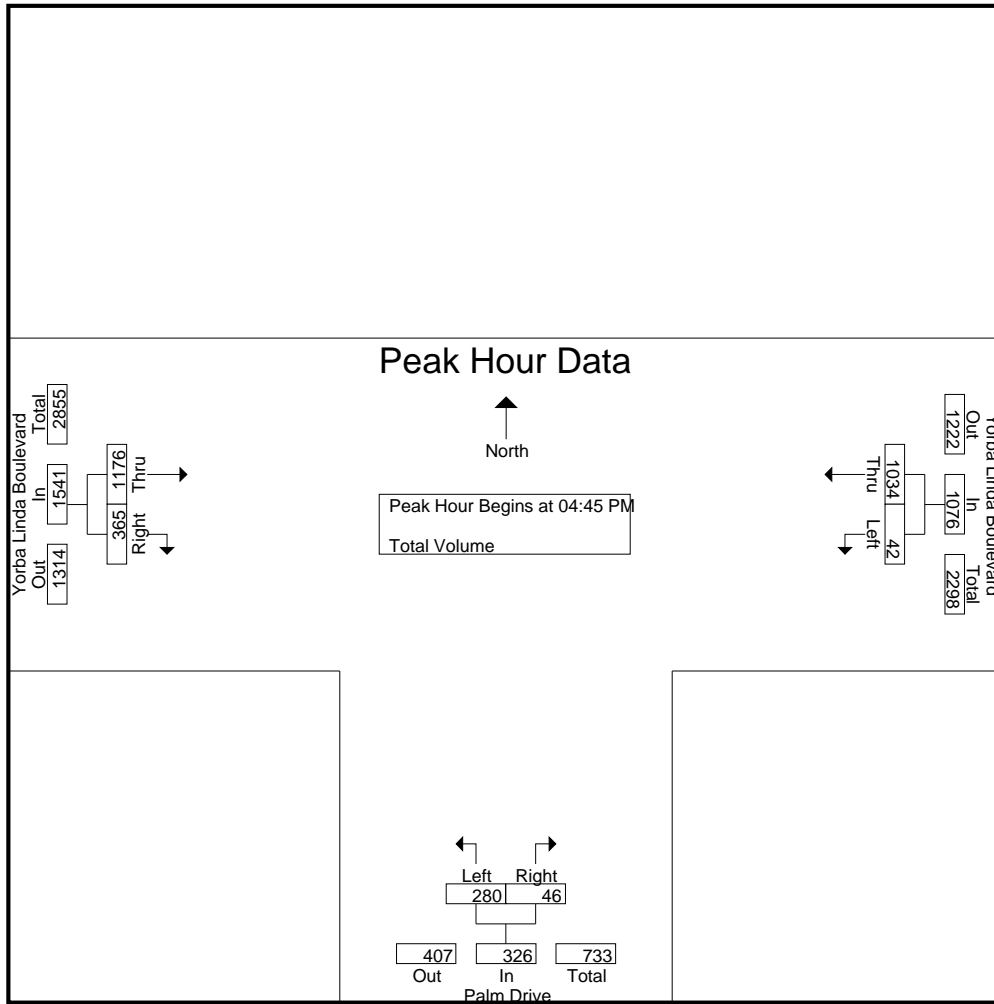
Start Time	Yorba Linda Boulevard Westbound			Palm Drive Northbound			Yorba Linda Boulevard Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	11	206	217	62	9	71	280	94	374	662
04:15 PM	14	216	230	65	11	76	279	86	365	671
04:30 PM	9	226	235	54	10	64	259	73	332	631
04:45 PM	12	224	236	66	13	79	271	93	364	679
Total	46	872	918	247	43	290	1089	346	1435	2643
05:00 PM	9	288	297	58	14	72	313	97	410	779
05:15 PM	9	278	287	86	10	96	263	88	351	734
05:30 PM	12	244	256	70	9	79	329	87	416	751
05:45 PM	7	203	210	68	10	78	301	87	388	676
Total	37	1013	1050	282	43	325	1206	359	1565	2940
Grand Total	83	1885	1968	529	86	615	2295	705	3000	5583
Apprch %	4.2	95.8		86	14		76.5	23.5		
Total %	1.5	33.8	35.2	9.5	1.5	11	41.1	12.6	53.7	

Start Time	Yorba Linda Boulevard Westbound			Palm Drive Northbound			Yorba Linda Boulevard Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:45 PM	<b>12</b>	224	236	66	13	79	271	93	364	679
05:00 PM	9	<b>288</b>	<b>297</b>	58	<b>14</b>	72	313	<b>97</b>	410	<b>779</b>
05:15 PM	9	278	287	<b>86</b>	10	<b>96</b>	263	88	351	734
05:30 PM	12	244	256	70	9	79	<b>329</b>	87	<b>416</b>	751
Total Volume	42	1034	1076	280	46	326	1176	365	1541	2943
% App. Total	3.9	96.1		85.9	14.1		76.3	23.7		
PHF	.875	.898	.906	.814	.821	.849	.894	.941	.926	.944

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Placentia  
 N/S: Palm Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 10PLAPAYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			05:00 PM		
+0 mins.	12	224	236	66	13	79	313	97	410
+15 mins.	9	288	297	58	14	72	263	88	351
+30 mins.	9	278	287	86	10	96	329	87	416
+45 mins.	12	244	256	70	9	79	301	87	388
Total Volume	42	1034	1076	280	46	326	1206	359	1565
% App. Total	3.9	96.1		85.9	14.1		77.1	22.9	
PHF	.875	.898	.906	.814	.821	.849	.916	.925	.941

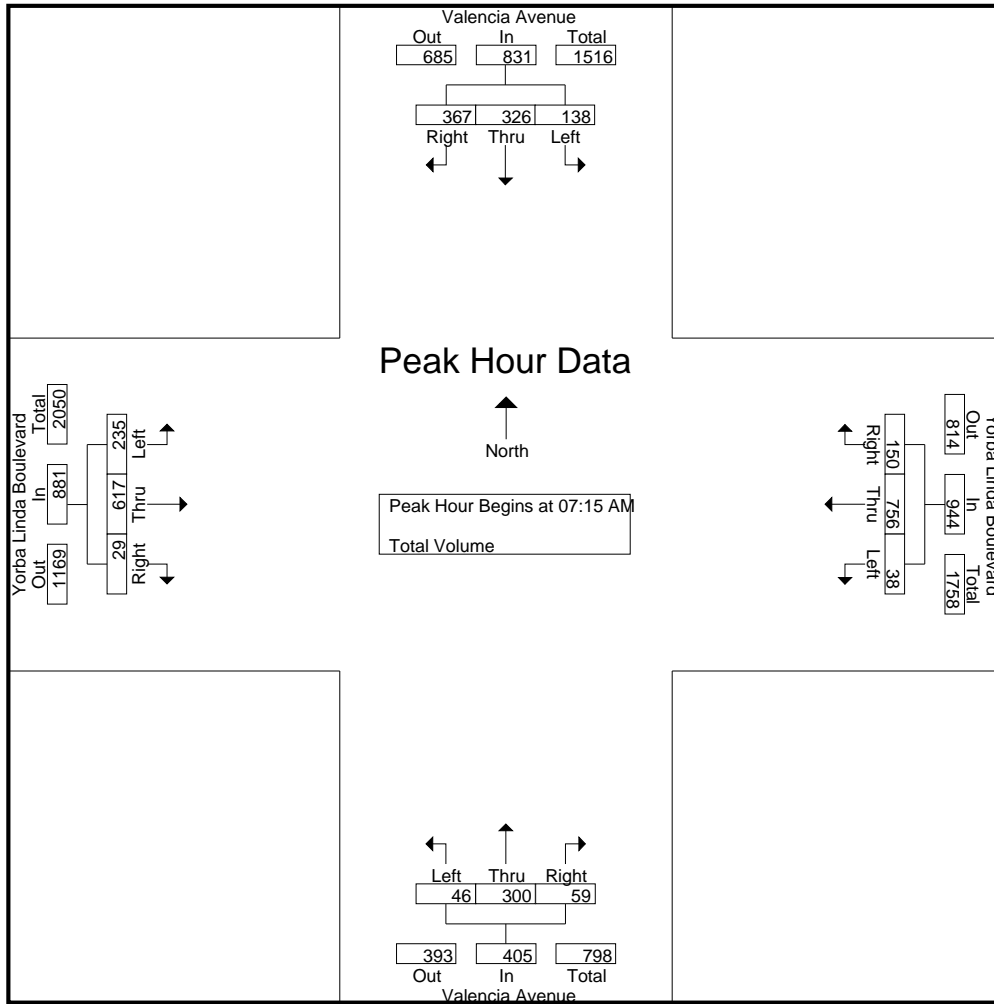
City of Placentia  
 N/S: Valencia Avenue  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 11PLAVAYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Yorba Linda Boulevard Westbound				Valencia Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	14	41	42	97	3	117	22	142	5	22	2	29	25	101	3	129	397
07:15 AM	24	59	52	135	2	160	31	193	12	54	6	72	51	119	7	177	577
07:30 AM	31	112	111	254	13	206	59	278	20	136	12	168	78	152	7	237	937
07:45 AM	66	111	166	343	16	226	38	280	7	81	10	98	82	188	5	275	996
Total	135	323	371	829	34	709	150	893	44	293	30	367	236	560	22	818	2907
08:00 AM	17	44	38	99	7	164	22	193	7	29	31	67	24	158	10	192	551
08:15 AM	15	45	35	95	23	205	27	255	3	29	8	40	11	155	3	169	559
08:30 AM	24	38	26	88	10	162	9	181	7	31	9	47	13	120	4	137	453
08:45 AM	28	43	32	103	4	136	16	156	6	17	8	31	23	155	4	182	472
Total	84	170	131	385	44	667	74	785	23	106	56	185	71	588	21	680	2035
Grand Total	219	493	502	1214	78	1376	224	1678	67	399	86	552	307	1148	43	1498	4942
Apprch %	18	40.6	41.4		4.6	82	13.3		12.1	72.3	15.6		20.5	76.6	2.9		
Total %	4.4	10	10.2	24.6	1.6	27.8	4.5	34	1.4	8.1	1.7	11.2	6.2	23.2	0.9	30.3	

Start Time	Valencia Avenue Southbound				Yorba Linda Boulevard Westbound				Valencia Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	24	59	52	135	2	160	31	193	12	54	6	72	51	119	7	177	577
07:30 AM	31	112	111	254	13	206	59	278	20	136	12	168	78	152	7	237	937
07:45 AM	66	111	166	343	16	226	38	280	7	81	10	98	82	188	5	275	996
08:00 AM	17	44	38	99	7	164	22	193	7	29	31	67	24	158	10	192	551
Total Volume	138	326	367	831	38	756	150	944	46	300	59	405	235	617	29	881	3061
% App. Total	16.6	39.2	44.2		4	80.1	15.9		11.4	74.1	14.6		26.7	70	3.3		
PHF	.523	.728	.553	.606	.594	.836	.636	.843	.575	.551	.476	.603	.716	.820	.725	.801	.768



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:15 AM				07:15 AM			
+0 mins.	24	59	52	135	13	206	<b>59</b>	278	12	54	6	72	51	119	7	177
+15 mins.	31	<b>112</b>	111	254	16	<b>226</b>	38	<b>280</b>	<b>20</b>	<b>136</b>	12	<b>168</b>	78	152	7	237
+30 mins.	<b>66</b>	111	<b>166</b>	<b>343</b>	7	164	22	193	7	81	10	98	<b>82</b>	<b>188</b>	5	<b>275</b>
+45 mins.	17	44	38	99	<b>23</b>	205	27	255	7	29	<b>31</b>	67	24	158	<b>10</b>	192
Total Volume	138	326	367	831	59	801	146	1006	46	300	59	405	235	617	29	881
% App. Total	16.6	39.2	44.2		5.9	79.6	14.5		11.4	74.1	14.6		26.7	70	3.3	
PHF	.523	.728	.553	.606	.641	.886	.619	.898	.575	.551	.476	.603	.716	.820	.725	.801



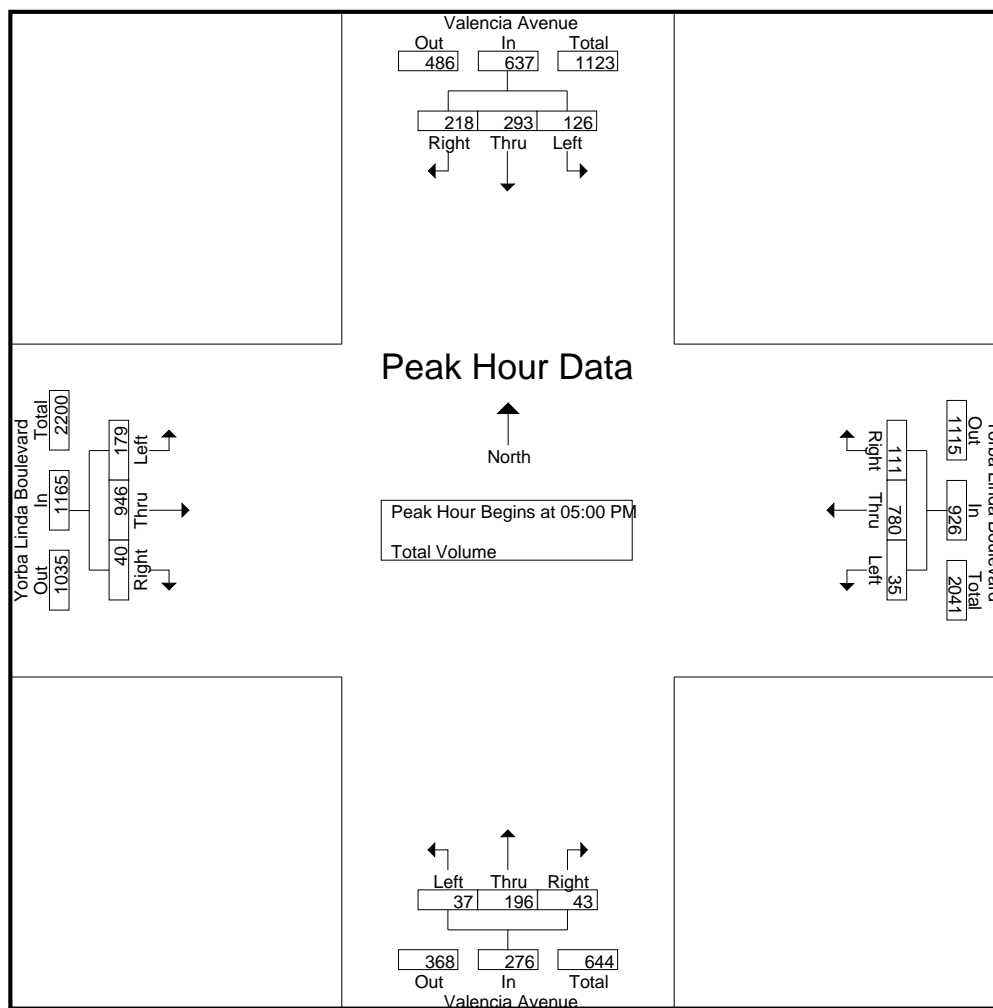
City of Placentia  
 N/S: Valencia Avenue  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 11PLAVAYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Yorba Linda Boulevard Westbound				Valencia Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	20	51	38	109	8	173	25	206	8	40	3	51	39	205	10	254	620
04:15 PM	23	55	22	100	8	190	31	229	4	39	11	54	39	230	5	274	657
04:30 PM	27	55	50	132	7	180	14	201	9	29	14	52	37	210	9	256	641
04:45 PM	21	52	36	109	10	191	29	230	8	40	8	56	42	219	7	268	663
Total	91	213	146	450	33	734	99	866	29	148	36	213	157	864	31	1052	2581
05:00 PM	43	88	64	195	3	232	37	272	6	61	10	77	57	246	15	318	862
05:15 PM	35	99	73	207	9	197	24	230	12	37	14	63	41	210	6	257	757
05:30 PM	27	55	41	123	8	184	23	215	9	51	11	71	42	262	7	311	720
05:45 PM	21	51	40	112	15	167	27	209	10	47	8	65	39	228	12	279	665
Total	126	293	218	637	35	780	111	926	37	196	43	276	179	946	40	1165	3004
Grand Total	217	506	364	1087	68	1514	210	1792	66	344	79	489	336	1810	71	2217	5585
Apprch %	20	46.6	33.5		3.8	84.5	11.7		13.5	70.3	16.2		15.2	81.6	3.2		
Total %	3.9	9.1	6.5	19.5	1.2	27.1	3.8	32.1	1.2	6.2	1.4	8.8	6	32.4	1.3	39.7	

Start Time	Valencia Avenue Southbound				Yorba Linda Boulevard Westbound				Valencia Avenue Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	43	88	64	195	3	232	37	272	6	61	10	77	57	246	15	318	862
05:15 PM	35	99	73	207	9	197	24	230	12	37	14	63	41	210	6	257	757
05:30 PM	27	55	41	123	8	184	23	215	9	51	11	71	42	262	7	311	720
05:45 PM	21	51	40	112	15	167	27	209	10	47	8	65	39	228	12	279	665
Total Volume	126	293	218	637	35	780	111	926	37	196	43	276	179	946	40	1165	3004
% App. Total	19.8	46	34.2		3.8	84.2	12		13.4	71	15.6		15.4	81.2	3.4		
PHF	.733	.740	.747	.769	.583	.841	.750	.851	.771	.803	.768	.896	.785	.903	.667	.916	.871



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				05:00 PM				05:00 PM			
+0 mins.	27	55	50	132	<b>10</b>	191	29	230	6	<b>61</b>	10	<b>77</b>	<b>57</b>	246	<b>15</b>	<b>318</b>
+15 mins.	21	52	36	109	3	<b>232</b>	<b>37</b>	<b>272</b>	<b>12</b>	37	<b>14</b>	63	41	210	6	257
+30 mins.	<b>43</b>	88	64	195	9	197	24	230	9	51	11	71	42	<b>262</b>	7	311
+45 mins.	35	<b>99</b>	<b>73</b>	<b>207</b>	8	184	23	215	10	47	8	65	39	228	12	279
Total Volume	126	294	223	643	30	804	113	947	37	196	43	276	179	946	40	1165
% App. Total	19.6	45.7	34.7		3.2	84.9	11.9		13.4	71	15.6		15.4	81.2	3.4	
PHF	.733	.742	.764	.777	.750	.866	.764	.870	.771	.803	.768	.896	.785	.903	.667	.916

City of Placentia  
 N/S: Rose Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 12PLAROYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Yorba Linda Boulevard Westbound				Rose Drive Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	17	166	13	196	51	89	17	157	11	68	20	99	12	93	10	115	567
07:15 AM	19	167	19	205	74	149	35	258	18	82	29	129	12	105	12	129	721
07:30 AM	31	187	26	244	77	220	48	345	24	145	31	200	35	137	9	181	970
07:45 AM	43	226	28	297	60	184	38	282	34	137	49	220	31	167	20	218	1017
Total	110	746	86	942	262	642	138	1042	87	432	129	648	90	502	51	643	3275
08:00 AM	24	210	18	252	61	136	32	229	15	91	35	141	12	123	13	148	770
08:15 AM	34	197	19	250	62	131	33	226	19	102	27	148	14	109	9	132	756
08:30 AM	18	159	13	190	61	121	36	218	23	95	31	149	12	111	12	135	692
08:45 AM	31	160	23	214	58	127	33	218	23	107	23	153	15	126	20	161	746
Total	107	726	73	906	242	515	134	891	80	395	116	591	53	469	54	576	2964
Grand Total	217	1472	159	1848	504	1157	272	1933	167	827	245	1239	143	971	105	1219	6239
Apprch %	11.7	79.7	8.6		26.1	59.9	14.1		13.5	66.7	19.8		11.7	79.7	8.6		
Total %	3.5	23.6	2.5	29.6	8.1	18.5	4.4	31	2.7	13.3	3.9	19.9	2.3	15.6	1.7	19.5	

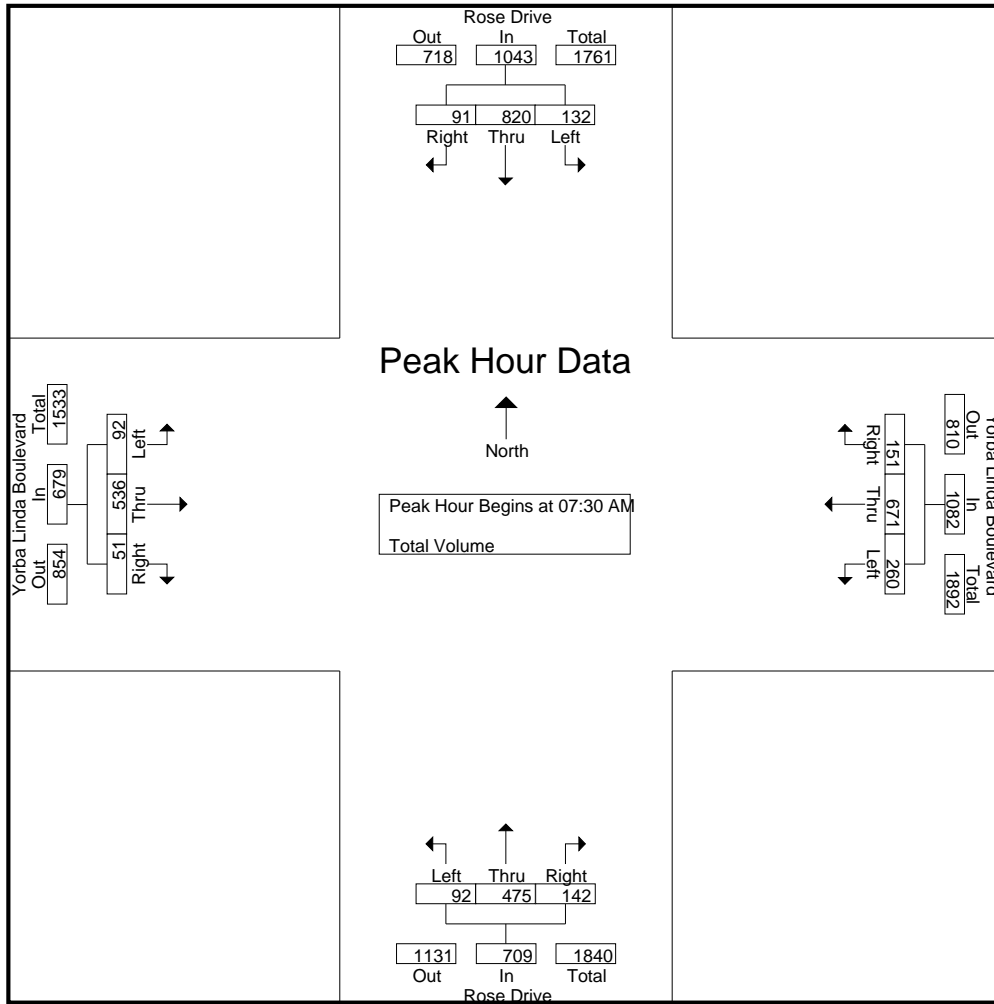
Start Time	Rose Drive Southbound				Yorba Linda Boulevard Westbound				Rose Drive Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	31	187	26	244	<b>77</b>	<b>220</b>	<b>48</b>	<b>345</b>	24	<b>145</b>	31	200	<b>35</b>	137	9	181	970
07:45 AM	<b>43</b>	<b>226</b>	<b>28</b>	<b>297</b>	60	184	38	282	<b>34</b>	137	<b>49</b>	<b>220</b>	31	<b>167</b>	<b>20</b>	<b>218</b>	<b>1017</b>
08:00 AM	24	210	18	252	61	136	32	229	15	91	35	141	12	123	13	148	770
08:15 AM	34	197	19	250	62	131	33	226	19	102	27	148	14	109	9	132	756
Total Volume	132	820	91	1043	260	671	151	1082	92	475	142	709	92	536	51	679	3513
% App. Total	12.7	78.6	8.7		24	62	14		13	67	20		13.5	78.9	7.5		
PHF	.767	.907	.813	.878	.844	.763	.786	.784	.676	.819	.724	.806	.657	.802	.638	.779	.864

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Placentia  
 N/S: Rose Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 12PLAROYLAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:30 AM				07:30 AM			
+0 mins.	31	187	26	244	74	149	35	258	24	<b>145</b>	31	200	<b>35</b>	137	9	181
+15 mins.	<b>43</b>	<b>226</b>	<b>28</b>	<b>297</b>	<b>77</b>	<b>220</b>	<b>48</b>	<b>345</b>	<b>34</b>	137	<b>49</b>	<b>220</b>	31	<b>167</b>	<b>20</b>	<b>218</b>
+30 mins.	24	210	18	252	60	184	38	282	15	91	35	141	12	123	13	148
+45 mins.	34	197	19	250	61	136	32	229	19	102	27	148	14	109	9	132
Total Volume	132	820	91	1043	272	689	153	1114	92	475	142	709	92	536	51	679
% App. Total	12.7	78.6	8.7		24.4	61.8	13.7		13	67	20		13.5	78.9	7.5	
PHF	.767	.907	.813	.878	.883	.783	.797	.807	.676	.819	.724	.806	.657	.802	.638	.779

City of Placentia  
 N/S: Rose Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 12PLAROYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

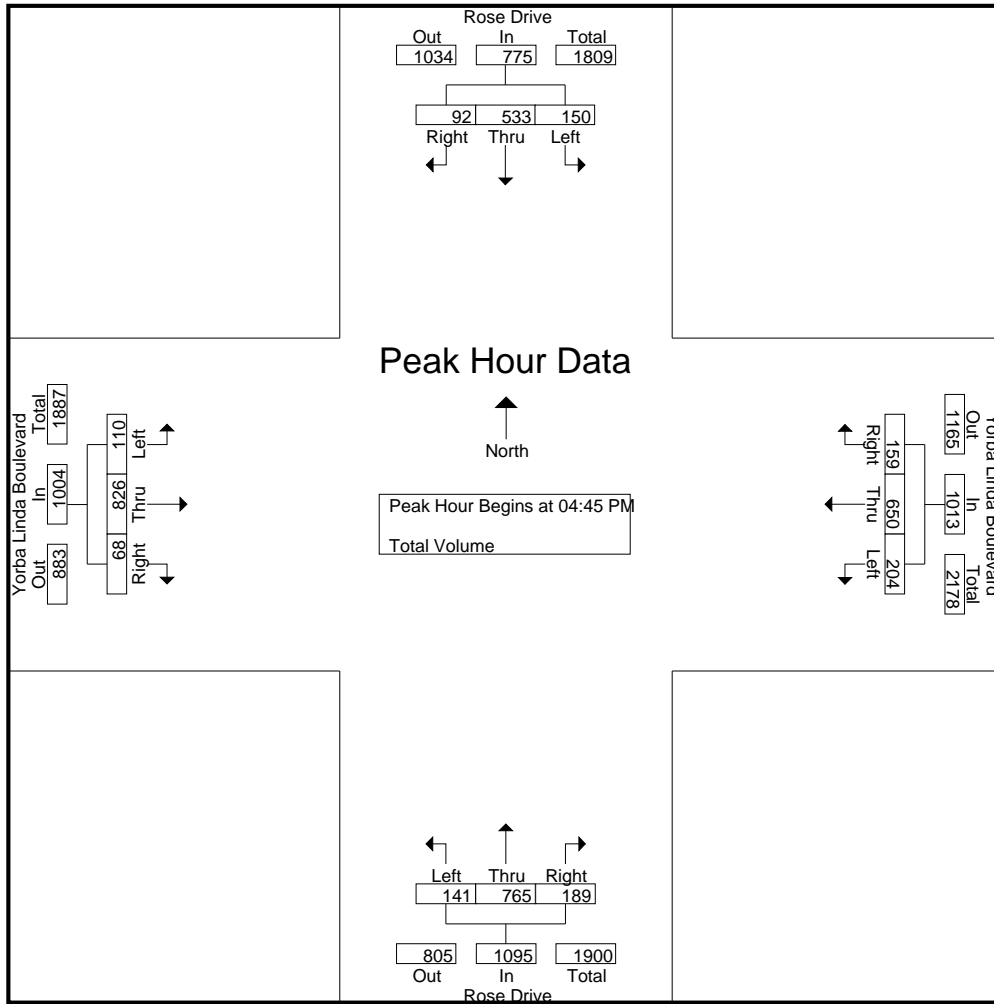
Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Yorba Linda Boulevard Westbound				Rose Drive Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	32	141	24	197	53	147	26	226	26	140	48	214	23	194	16	233	870
04:15 PM	32	132	15	179	48	154	18	220	22	142	51	215	36	196	20	252	866
04:30 PM	38	126	18	182	47	140	34	221	36	157	56	249	27	173	17	217	869
04:45 PM	44	162	27	233	56	164	39	259	35	180	56	271	25	208	9	242	1005
Total	146	561	84	791	204	605	117	926	119	619	211	949	111	771	62	944	3610
05:00 PM	34	129	22	185	46	183	37	266	35	201	40	276	27	223	23	273	1000
05:15 PM	35	118	21	174	52	152	41	245	33	193	51	277	29	196	15	240	936
05:30 PM	37	124	22	183	50	151	42	243	38	191	42	271	29	199	21	249	946
05:45 PM	24	109	17	150	47	134	28	209	26	162	36	224	18	209	18	245	828
Total	130	480	82	692	195	620	148	963	132	747	169	1048	103	827	77	1007	3710
Grand Total	276	1041	166	1483	399	1225	265	1889	251	1366	380	1997	214	1598	139	1951	7320
Apprch %	18.6	70.2	11.2		21.1	64.8	14		12.6	68.4	19		11	81.9	7.1		
Total %	3.8	14.2	2.3	20.3	5.5	16.7	3.6	25.8	3.4	18.7	5.2	27.3	2.9	21.8	1.9	26.7	

Start Time	Rose Drive Southbound				Yorba Linda Boulevard Westbound				Rose Drive Northbound				Yorba Linda Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	<b>44</b>	<b>162</b>	<b>27</b>	<b>233</b>	<b>56</b>	164	39	259	35	180	<b>56</b>	271	25	208	9	242	<b>1005</b>
05:00 PM	34	129	22	185	46	<b>183</b>	37	<b>266</b>	35	<b>201</b>	40	276	27	<b>223</b>	<b>23</b>	<b>273</b>	1000
05:15 PM	35	118	21	174	52	152	41	245	33	193	51	<b>277</b>	<b>29</b>	196	15	240	936
05:30 PM	37	124	22	183	50	151	<b>42</b>	243	<b>38</b>	191	42	271	29	199	21	249	946
Total Volume	150	533	92	775	204	650	159	1013	141	765	189	1095	110	826	68	1004	3887
% App. Total	19.4	68.8	11.9		20.1	64.2	15.7		12.9	69.9	17.3		11	82.3	6.8		
PHF	.852	.823	.852	.832	.911	.888	.946	.952	.928	.951	.844	.988	.948	.926	.739	.919	.967

City of Placentia  
 N/S: Rose Drive  
 E/W: Yorba Linda Boulevard  
 Weather: Clear

File Name : 12PLAROYLPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				04:45 PM				05:00 PM			
+0 mins.	32	141	24	197	<b>56</b>	164	39	259	35	180	<b>56</b>	271	27	<b>223</b>	<b>23</b>	<b>273</b>
+15 mins.	32	132	15	179	46	<b>183</b>	37	<b>266</b>	35	<b>201</b>	40	276	<b>29</b>	196	15	240
+30 mins.	38	126	18	182	52	152	41	245	33	193	51	<b>277</b>	29	199	21	249
+45 mins.	<b>44</b>	<b>162</b>	<b>27</b>	<b>233</b>	50	151	<b>42</b>	243	<b>38</b>	191	42	271	18	209	18	245
Total Volume	146	561	84	791	204	650	159	1013	141	765	189	1095	103	827	77	1007
% App. Total	18.5	70.9	10.6		20.1	64.2	15.7		12.9	69.9	17.3		10.2	82.1	7.6	
PHF	.830	.866	.778	.849	.911	.888	.946	.952	.928	.951	.844	.988	.888	.927	.837	.922

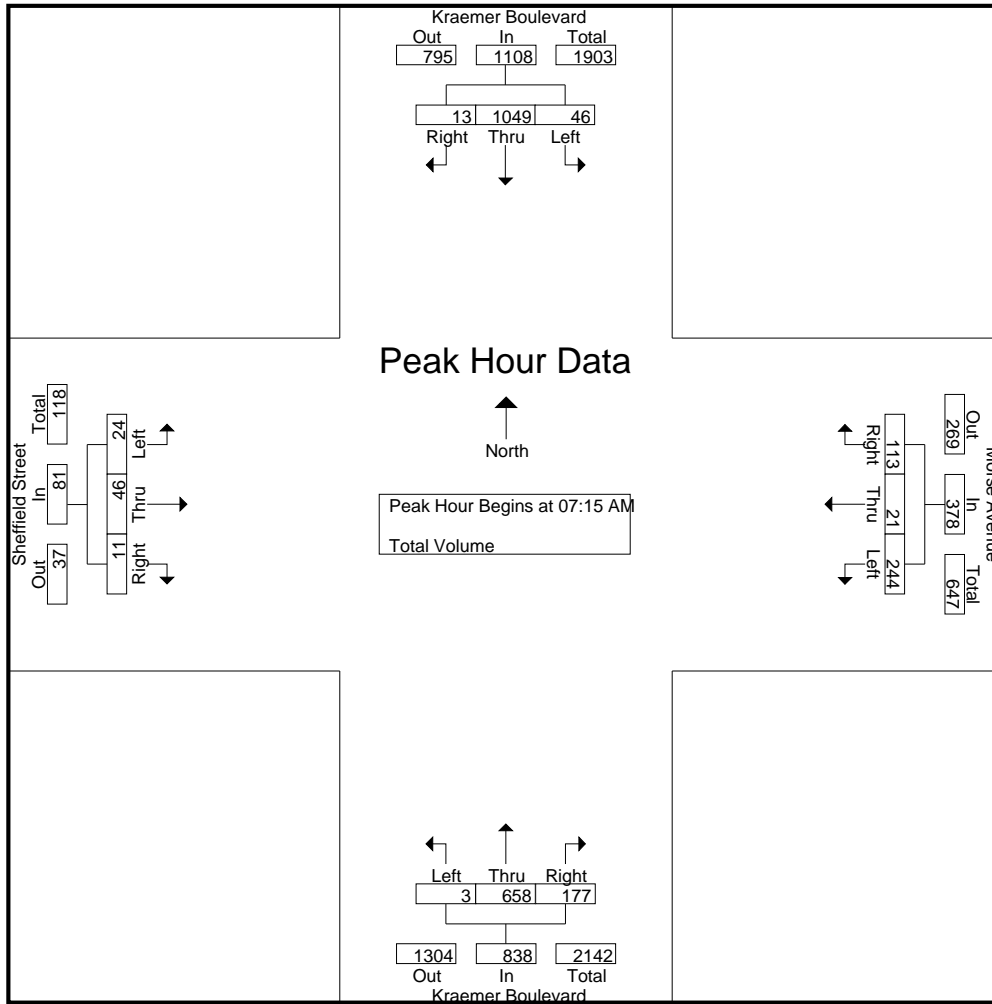
City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Sheffield Street / Morse Avenue  
 Weather: Clear

File Name : 13PLAKRMOAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Morse Avenue Westbound				Kraemer Boulevard Northbound				Sheffield Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	5	204	0	209	28	0	24	52	0	102	11	113	7	4	3	14	388
07:15 AM	8	233	2	243	51	3	20	74	0	122	29	151	7	9	0	16	484
07:30 AM	18	282	5	305	75	8	30	113	1	227	79	307	8	21	8	37	762
07:45 AM	11	287	4	302	81	8	44	133	1	173	43	217	4	11	3	18	670
Total	42	1006	11	1059	235	19	118	372	2	624	162	788	26	45	14	85	2304
08:00 AM	9	247	2	258	37	2	19	58	1	136	26	163	5	5	0	10	489
08:15 AM	10	216	0	226	40	1	17	58	0	146	10	156	5	3	5	13	453
08:30 AM	19	202	1	222	19	1	25	45	0	147	17	164	1	2	3	6	437
08:45 AM	16	184	1	201	11	2	25	38	1	164	14	179	0	1	1	2	420
Total	54	849	4	907	107	6	86	199	2	593	67	662	11	11	9	31	1799
Grand Total	96	1855	15	1966	342	25	204	571	4	1217	229	1450	37	56	23	116	4103
Apprch %	4.9	94.4	0.8		59.9	4.4	35.7		0.3	83.9	15.8		31.9	48.3	19.8		
Total %	2.3	45.2	0.4	47.9	8.3	0.6	5	13.9	0.1	29.7	5.6	35.3	0.9	1.4	0.6	2.8	

Start Time	Kraemer Boulevard Southbound				Morse Avenue Westbound				Kraemer Boulevard Northbound				Sheffield Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	8	233	2	243	51	3	20	74	0	122	29	151	7	9	0	16	484
07:30 AM	18	282	5	305	75	8	30	113	1	227	79	307	8	21	8	37	762
07:45 AM	11	287	4	302	81	8	44	133	1	173	43	217	4	11	3	18	670
08:00 AM	9	247	2	258	37	2	19	58	1	136	26	163	5	5	0	10	489
Total Volume	46	1049	13	1108	244	21	113	378	3	658	177	838	24	46	11	81	2405
% App. Total	4.2	94.7	1.2		64.6	5.6	29.9		0.4	78.5	21.1		29.6	56.8	13.6		
PHF	.639	.914	.650	.908	.753	.656	.642	.711	.750	.725	.560	.682	.750	.548	.344	.547	.789



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:00 AM							
+0 mins.	8	233	2	243	51	3	20	74	1	<b>227</b>	<b>79</b>	<b>307</b>	7	4	3	14
+15 mins.	<b>18</b>	282	<b>5</b>	<b>305</b>	75	<b>8</b>	30	113	1	173	43	217	7	9	0	16
+30 mins.	11	<b>287</b>	4	302	<b>81</b>	8	<b>44</b>	<b>133</b>	1	136	26	163	<b>8</b>	<b>21</b>	<b>8</b>	<b>37</b>
+45 mins.	9	247	2	258	37	2	19	58	0	146	10	156	4	11	3	18
Total Volume	46	1049	13	1108	244	21	113	378	3	682	158	843	26	45	14	85
% App. Total	4.2	94.7	1.2		64.6	5.6	29.9		0.4	80.9	18.7		30.6	52.9	16.5	
PHF	.639	.914	.650	.908	.753	.656	.642	.711	.750	.751	.500	.686	.813	.536	.438	.574



City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Sheffield Street / Morse Avenue  
 Weather: Clear

File Name : 13PLAKRMOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

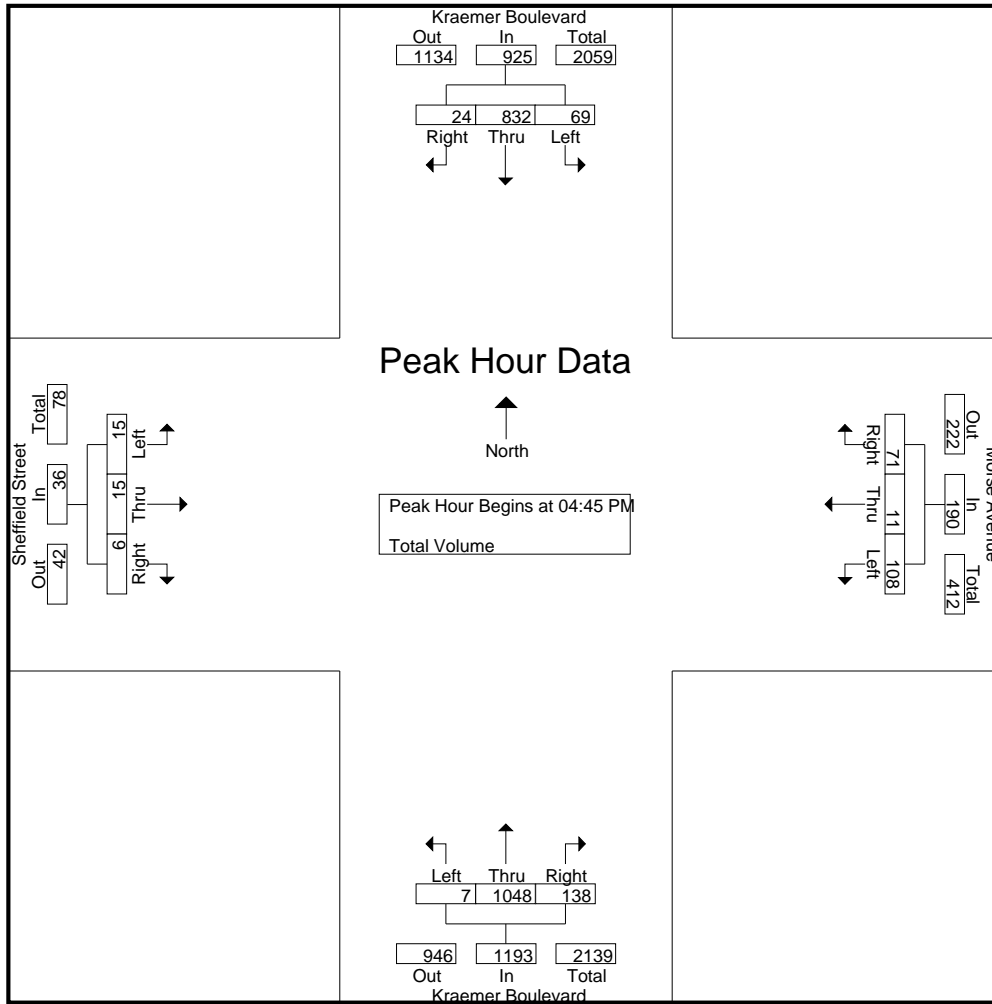
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Morse Avenue Westbound				Kraemer Boulevard Northbound				Sheffield Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	18	180	3	201	27	2	27	56	4	235	29	268	2	2	4	8	533
04:15 PM	31	205	5	241	18	3	25	46	0	248	24	272	3	3	4	10	569
04:30 PM	22	177	5	204	27	3	18	48	4	221	25	250	4	2	2	8	510
04:45 PM	14	206	7	227	22	2	24	48	1	253	31	285	1	5	4	10	570
Total	85	768	20	873	94	10	94	198	9	957	109	1075	10	12	14	36	2182
05:00 PM	15	208	9	232	24	2	18	44	2	260	40	302	6	2	0	8	586
05:15 PM	18	209	3	230	30	2	17	49	1	265	29	295	4	4	2	10	584
05:30 PM	22	209	5	236	32	5	12	49	3	270	38	311	4	4	0	8	604
05:45 PM	16	189	4	209	22	5	18	45	0	242	25	267	4	1	3	8	529
Total	71	815	21	907	108	14	65	187	6	1037	132	1175	18	11	5	34	2303
Grand Total	156	1583	41	1780	202	24	159	385	15	1994	241	2250	28	23	19	70	4485
Apprch %	8.8	88.9	2.3		52.5	6.2	41.3		0.7	88.6	10.7		40	32.9	27.1		
Total %	3.5	35.3	0.9	39.7	4.5	0.5	3.5	8.6	0.3	44.5	5.4	50.2	0.6	0.5	0.4	1.6	

Start Time	Kraemer Boulevard Southbound				Morse Avenue Westbound				Kraemer Boulevard Northbound				Sheffield Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	14	206	7	227	22	2	24	48	1	253	31	285	1	5	4	10	570
05:00 PM	15	208	9	232	24	2	18	44	2	260	40	302	6	2	0	8	586
05:15 PM	18	209	3	230	30	2	17	49	1	265	29	295	4	4	2	10	584
05:30 PM	22	209	5	236	32	5	12	49	3	270	38	311	4	4	0	8	604
Total Volume	69	832	24	925	108	11	71	190	7	1048	138	1193	15	15	6	36	2344
% App. Total	7.5	89.9	2.6		56.8	5.8	37.4		0.6	87.8	11.6		41.7	41.7	16.7		
PHF	.784	.995	.667	.980	.844	.550	.740	.969	.583	.970	.863	.959	.625	.750	.375	.900	.970

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Sheffield Street / Morse Avenue  
 Weather: Clear

File Name : 13PLAKRMOPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:45 PM				04:00 PM			
+0 mins.	14	206	7	227	<b>27</b>	2	<b>27</b>	<b>56</b>	1	253	31	285	2	2	<b>4</b>	8
+15 mins.	15	208	<b>9</b>	232	18	<b>3</b>	25	46	2	260	<b>40</b>	302	3	3	4	<b>10</b>
+30 mins.	18	<b>209</b>	3	230	27	3	18	48	1	265	29	295	<b>4</b>	2	2	8
+45 mins.	<b>22</b>	209	5	<b>236</b>	22	2	24	48	<b>3</b>	<b>270</b>	38	<b>311</b>	1	<b>5</b>	4	10
Total Volume	69	832	24	925	94	10	94	198	7	1048	138	1193	10	12	14	36
% App. Total	7.5	89.9	2.6		47.5	5.1	47.5		0.6	87.8	11.6		27.8	33.3	38.9	
PHF	.784	.995	.667	.980	.870	.833	.870	.884	.583	.970	.863	.959	.625	.600	.875	.900

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Palm Drive  
 Weather: Clear

File Name : PLAVAPAAM  
 Site Code : 22117718  
 Start Date : 12/12/2017  
 Page No : 1

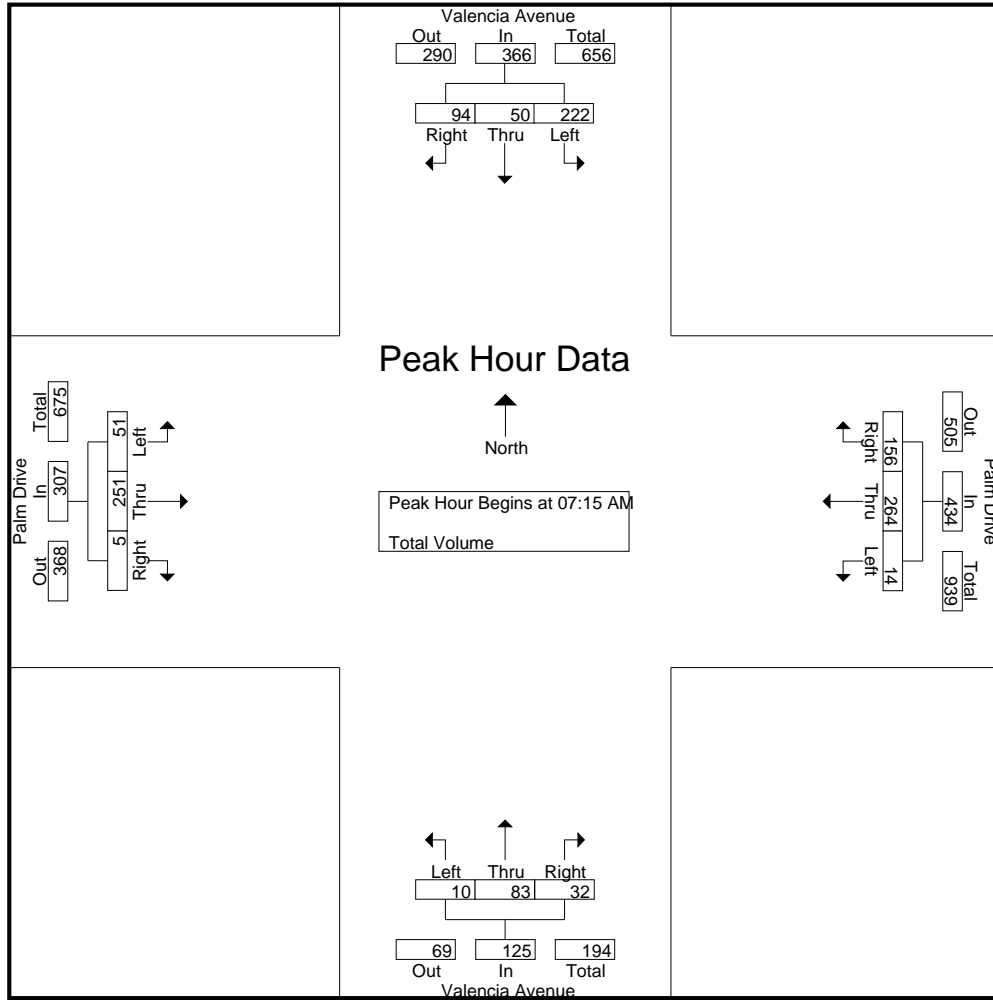
Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Palm Drive Westbound				Valencia Avenue Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	48	4	15	67	7	49	17	73	3	8	4	15	3	45	0	48	203
07:15 AM	51	11	20	82	3	72	34	109	3	20	7	30	10	41	0	51	272
07:30 AM	57	15	27	99	5	75	61	141	4	28	10	42	16	53	2	71	353
07:45 AM	83	17	31	131	0	57	37	94	1	19	6	26	17	102	2	121	372
Total	239	47	93	379	15	253	149	417	11	75	27	113	46	241	4	291	1200
08:00 AM	31	7	16	54	6	60	24	90	2	16	9	27	8	55	1	64	235
08:15 AM	37	3	17	57	0	67	11	78	4	3	2	9	9	52	0	61	205
08:30 AM	44	7	5	56	2	68	17	87	2	6	4	12	6	46	0	52	207
08:45 AM	36	3	6	45	1	63	20	84	4	6	2	12	8	40	4	52	193
Total	148	20	44	212	9	258	72	339	12	31	17	60	31	193	5	229	840
Grand Total	387	67	137	591	24	511	221	756	23	106	44	173	77	434	9	520	2040
Apprch %	65.5	11.3	23.2		3.2	67.6	29.2		13.3	61.3	25.4		14.8	83.5	1.7		
Total %	19	3.3	6.7	29	1.2	25	10.8	37.1	1.1	5.2	2.2	8.5	3.8	21.3	0.4	25.5	

Start Time	Valencia Avenue Southbound				Palm Drive Westbound				Valencia Avenue Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	51	11	20	82	3	72	34	109	3	20	7	30	10	41	0	51	272
07:30 AM	57	15	27	99	5	<b>75</b>	<b>61</b>	<b>141</b>	<b>4</b>	<b>28</b>	<b>10</b>	<b>42</b>	16	53	<b>2</b>	71	353
07:45 AM	<b>83</b>	<b>17</b>	<b>31</b>	<b>131</b>	0	57	37	94	1	19	6	26	<b>17</b>	<b>102</b>	2	<b>121</b>	<b>372</b>
08:00 AM	31	7	16	54	<b>6</b>	60	24	90	2	16	9	27	8	55	1	64	235
Total Volume	222	50	94	366	14	264	156	434	10	83	32	125	51	251	5	307	1232
% App. Total	60.7	13.7	25.7		3.2	60.8	35.9		8	66.4	25.6		16.6	81.8	1.6		
PHF	.669	.735	.758	.698	.583	.880	.639	.770	.625	.741	.800	.744	.750	.615	.625	.634	.828

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Palm Drive  
 Weather: Clear

File Name : PLAVAPAAM  
 Site Code : 22117718  
 Start Date : 12/12/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:30 AM				07:45 AM			
+0 mins.	48	4	15	67	3	72	34	109	3	20	7	30	16	53	2	71
+15 mins.	51	11	20	82	5	<b>75</b>	<b>61</b>	<b>141</b>	<b>4</b>	<b>28</b>	<b>10</b>	<b>42</b>	<b>17</b>	<b>102</b>	2	<b>121</b>
+30 mins.	57	15	27	99	0	57	37	94	1	19	6	26	8	55	1	64
+45 mins.	<b>83</b>	<b>17</b>	<b>31</b>	<b>131</b>	<b>6</b>	60	24	90	2	16	9	27	9	52	0	61
Total Volume	239	47	93	379	14	264	156	434	10	83	32	125	50	262	5	317
% App. Total	63.1	12.4	24.5		3.2	60.8	35.9		8	66.4	25.6		15.8	82.6	1.6	
PHF	.720	.691	.750	.723	.583	.880	.639	.770	.625	.741	.800	.744	.735	.642	.625	.655

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Palm Drive  
 Weather: Clear

File Name : PLAVAPAPM  
 Site Code : 22117718  
 Start Date : 12/12/2017  
 Page No : 1

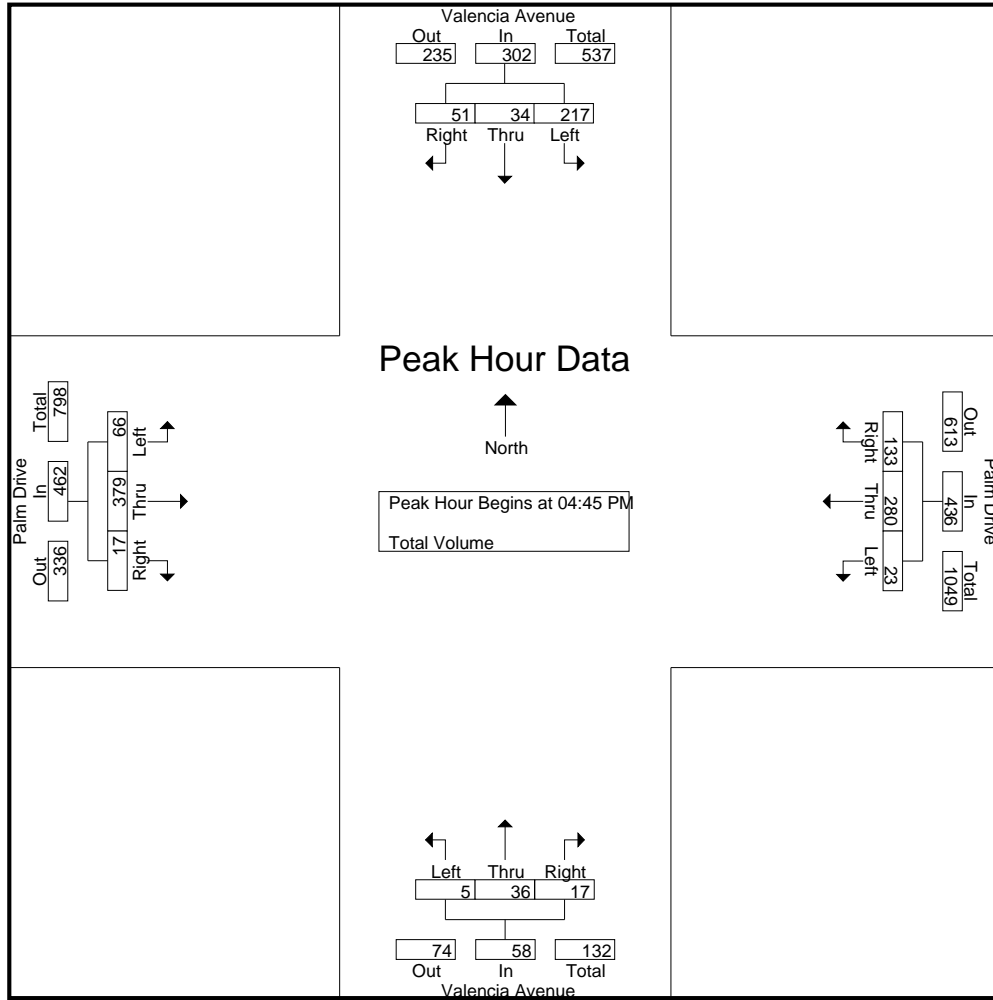
Groups Printed- Total Volume

Start Time	Valencia Avenue Southbound				Palm Drive Westbound				Valencia Avenue Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	40	15	21	76	4	54	17	75	0	9	4	13	16	80	5	101	265
04:15 PM	53	7	10	70	3	62	31	96	0	6	3	9	14	72	2	88	263
04:30 PM	43	9	22	74	6	58	25	89	2	12	4	18	12	75	2	89	270
04:45 PM	34	4	13	51	4	65	32	101	1	10	6	17	20	81	3	104	273
Total	170	35	66	271	17	239	105	361	3	37	17	57	62	308	12	382	1071
05:00 PM	60	10	10	80	5	69	31	105	2	7	4	13	18	105	7	130	328
05:15 PM	72	6	15	93	10	67	38	115	0	13	2	15	13	107	4	124	347
05:30 PM	51	14	13	78	4	79	32	115	2	6	5	13	15	86	3	104	310
05:45 PM	45	5	9	59	6	59	28	93	2	8	5	15	22	73	7	102	269
Total	228	35	47	310	25	274	129	428	6	34	16	56	68	371	21	460	1254
Grand Total	398	70	113	581	42	513	234	789	9	71	33	113	130	679	33	842	2325
Apprch %	68.5	12	19.4		5.3	65	29.7		8	62.8	29.2		15.4	80.6	3.9		
Total %	17.1	3	4.9	25	1.8	22.1	10.1	33.9	0.4	3.1	1.4	4.9	5.6	29.2	1.4	36.2	

Start Time	Valencia Avenue Southbound				Palm Drive Westbound				Valencia Avenue Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	34	4	13	51	4	65	32	101	1	10	6	17	20	81	3	104	273
05:00 PM	60	10	10	80	5	69	31	105	2	7	4	13	18	105	7	130	328
05:15 PM	72	6	15	93	10	67	38	115	0	13	2	15	13	107	4	124	347
05:30 PM	51	14	13	78	4	79	32	115	2	6	5	13	15	86	3	104	310
Total Volume	217	34	51	302	23	280	133	436	5	36	17	58	66	379	17	462	1258
% App. Total	71.9	11.3	16.9		5.3	64.2	30.5		8.6	62.1	29.3		14.3	82	3.7		
PHF	.753	.607	.850	.812	.575	.886	.875	.948	.625	.692	.708	.853	.825	.886	.607	.888	.906

City of Placentia  
 N/S: Valencia Avenue  
 E/W: Palm Drive  
 Weather: Clear

File Name : PLAVAPAPM  
 Site Code : 22117718  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				04:45 PM				04:30 PM				04:45 PM			
+0 mins.	60	10	10	80	4	65	32	101	2	12	4	18	20	81	3	104
+15 mins.	72	6	15	93	5	69	31	105	1	10	6	17	18	105	7	130
+30 mins.	51	14	13	78	10	67	38	115	2	7	4	13	13	107	4	124
+45 mins.	45	5	9	59	4	79	32	115	0	13	2	15	15	86	3	104
Total Volume	228	35	47	310	23	280	133	436	5	42	16	63	66	379	17	462
% App. Total	73.5	11.3	15.2		5.3	64.2	30.5		7.9	66.7	25.4		14.3	82	3.7	
PHF	.792	.625	.783	.833	.575	.886	.875	.948	.625	.808	.667	.875	.825	.886	.607	.888

City of Placentia  
 N/S: Rose Drive  
 E/W: Palm Drive  
 Weather: Clear

File Name : 15PLAROPAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

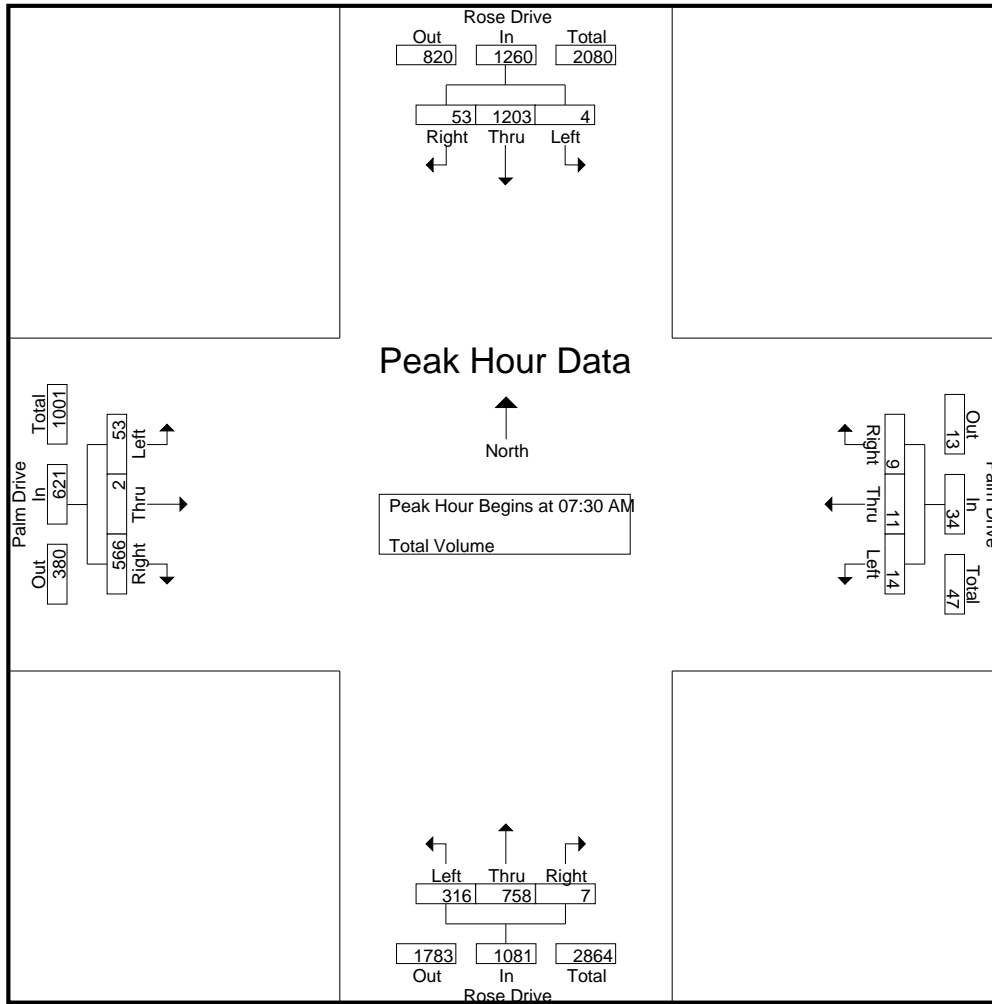
Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Palm Drive Westbound				Rose Drive Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	246	6	253	1	1	0	2	45	95	0	140	7	1	91	99	494
07:15 AM	1	261	12	274	3	0	1	4	66	131	2	199	13	0	123	136	613
07:30 AM	1	307	16	324	6	4	6	16	117	215	3	335	13	0	157	170	845
07:45 AM	0	322	13	335	3	1	1	5	86	220	1	307	20	1	181	202	849
Total	3	1136	47	1186	13	6	8	27	314	661	6	981	53	2	552	607	2801
08:00 AM	2	290	14	306	1	3	2	6	52	150	2	204	10	1	118	129	645
08:15 AM	1	284	10	295	4	3	0	7	61	173	1	235	10	0	110	120	657
08:30 AM	2	240	7	249	2	2	3	7	68	141	0	209	8	0	90	98	563
08:45 AM	0	225	7	232	1	2	1	4	72	164	2	238	12	0	95	107	581
Total	5	1039	38	1082	8	10	6	24	253	628	5	886	40	1	413	454	2446
Grand Total	8	2175	85	2268	21	16	14	51	567	1289	11	1867	93	3	965	1061	5247
Apprch %	0.4	95.9	3.7		41.2	31.4	27.5		30.4	69	0.6		8.8	0.3	91		
Total %	0.2	41.5	1.6	43.2	0.4	0.3	0.3	1	10.8	24.6	0.2	35.6	1.8	0.1	18.4	20.2	

Start Time	Rose Drive Southbound				Palm Drive Westbound				Rose Drive Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	307	16	324	6	4	6	16	117	215	3	335	13	0	157	170	845
07:45 AM	0	322	13	335	3	1	1	5	86	220	1	307	20	1	181	202	849
08:00 AM	2	290	14	306	1	3	2	6	52	150	2	204	10	1	118	129	645
08:15 AM	1	284	10	295	4	3	0	7	61	173	1	235	10	0	110	120	657
Total Volume	4	1203	53	1260	14	11	9	34	316	758	7	1081	53	2	566	621	2996
% App. Total	0.3	95.5	4.2		41.2	32.4	26.5		29.2	70.1	0.6		8.5	0.3	91.1		
PHF	.500	.934	.828	.940	.583	.688	.375	.531	.675	.861	.583	.807	.663	.500	.782	.769	.882

City of Placentia  
 N/S: Rose Drive  
 E/W: Palm Drive  
 Weather: Clear

File Name : 15PLAROPAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	1	307	16	324	6	4	6	16	117	215	3	335	13	0	123	136
+15 mins.	0	322	13	335	3	1	1	5	86	220	1	307	13	0	157	170
+30 mins.	2	290	14	306	1	3	2	6	52	150	2	204	20	1	181	202
+45 mins.	1	284	10	295	4	3	0	7	61	173	1	235	10	1	118	129
Total Volume	4	1203	53	1260	14	11	9	34	316	758	7	1081	56	2	579	637
% App. Total	0.3	95.5	4.2		41.2	32.4	26.5		29.2	70.1	0.6		8.8	0.3	90.9	
PHF	.500	.934	.828	.940	.583	.688	.375	.531	.675	.861	.583	.807	.700	.500	.800	.788



City of Placentia  
 N/S: Rose Drive  
 E/W: Palm Drive  
 Weather: Clear

File Name : 15PLAROPAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

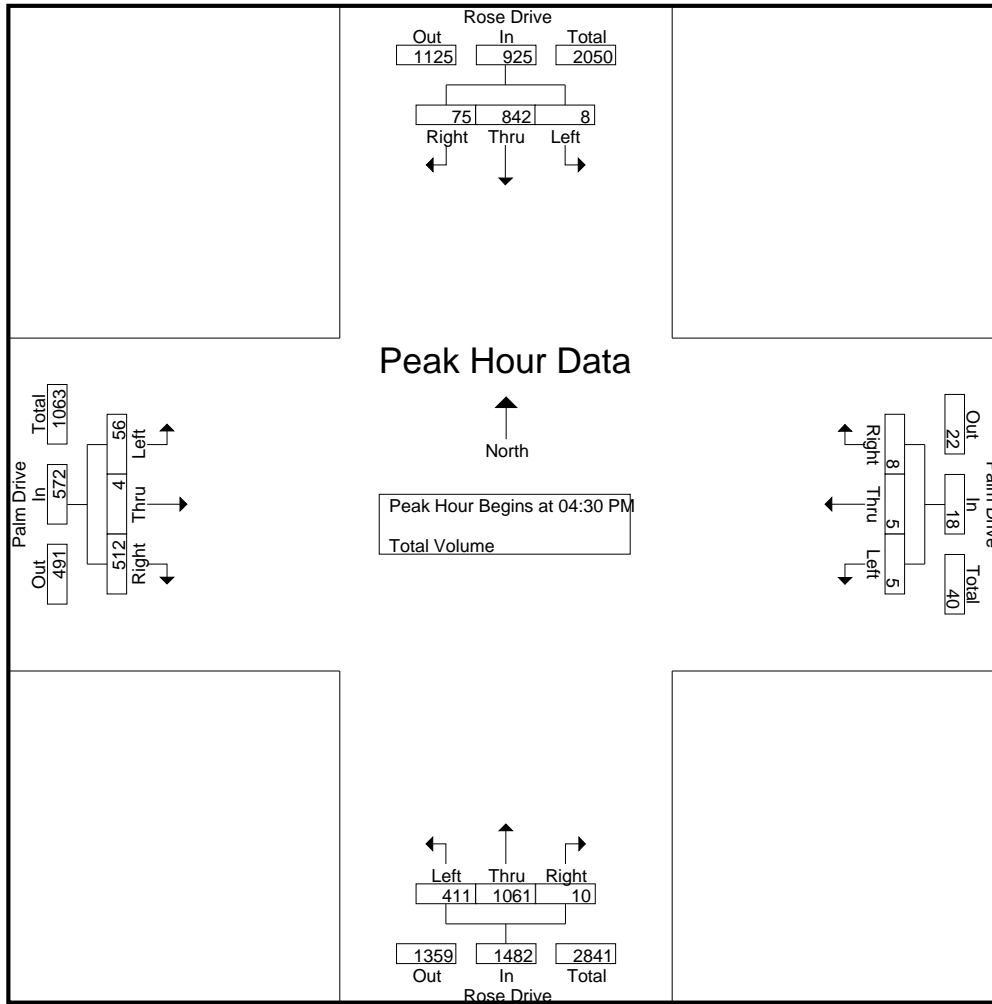
Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Palm Drive Westbound				Rose Drive Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	1	208	16	225	2	2	2	6	93	228	1	322	9	3	121	133	686
04:15 PM	1	193	26	220	1	1	2	4	100	205	4	309	17	1	120	138	671
04:30 PM	4	215	14	233	2	0	4	6	99	232	3	334	8	0	119	127	700
04:45 PM	2	231	20	253	1	1	4	6	89	273	2	364	16	1	110	127	750
Total	8	847	76	931	6	4	12	22	381	938	10	1329	50	5	470	525	2807
05:00 PM	0	199	21	220	1	2	0	3	115	299	3	417	15	0	133	148	788
05:15 PM	2	197	20	219	1	2	0	3	108	257	2	367	17	3	150	170	759
05:30 PM	1	191	15	207	1	1	2	4	100	256	4	360	14	2	107	123	694
05:45 PM	2	188	10	200	3	1	2	6	93	244	8	345	15	1	107	123	674
Total	5	775	66	846	6	6	4	16	416	1056	17	1489	61	6	497	564	2915
Grand Total	13	1622	142	1777	12	10	16	38	797	1994	27	2818	111	11	967	1089	5722
Apprch %	0.7	91.3	8		31.6	26.3	42.1		28.3	70.8	1		10.2	1	88.8		
Total %	0.2	28.3	2.5	31.1	0.2	0.2	0.3	0.7	13.9	34.8	0.5	49.2	1.9	0.2	16.9	19	

Start Time	Rose Drive Southbound				Palm Drive Westbound				Rose Drive Northbound				Palm Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	4	215	14	233	2	0	4	6	99	232	3	334	8	0	119	127	700
04:45 PM	2	231	20	253	1	1	4	6	89	273	2	364	16	1	110	127	750
05:00 PM	0	199	21	220	1	2	0	3	115	299	3	417	15	0	133	148	788
05:15 PM	2	197	20	219	1	2	0	3	108	257	2	367	17	3	150	170	759
Total Volume	8	842	75	925	5	5	8	18	411	1061	10	1482	56	4	512	572	2997
% App. Total	0.9	91	8.1		27.8	27.8	44.4		27.7	71.6	0.7		9.8	0.7	89.5		
PHF	.500	.911	.893	.914	.625	.625	.500	.750	.893	.887	.833	.888	.824	.333	.853	.841	.951

City of Placentia  
 N/S: Rose Drive  
 E/W: Palm Drive  
 Weather: Clear

File Name : 15PLAROPAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:45 PM				04:30 PM			
+0 mins.	1	208	16	225	<b>2</b>	<b>2</b>	2	<b>6</b>	89	273	2	364	8	0	119	127
+15 mins.	1	193	<b>26</b>	220	1	1	2	4	<b>115</b>	<b>299</b>	3	<b>417</b>	16	1	110	127
+30 mins.	<b>4</b>	215	14	233	2	0	<b>4</b>	6	108	257	2	367	15	0	133	148
+45 mins.	2	<b>231</b>	20	<b>253</b>	1	1	4	6	100	256	<b>4</b>	360	<b>17</b>	<b>3</b>	<b>150</b>	<b>170</b>
Total Volume	8	847	76	931	6	4	12	22	412	1085	11	1508	56	4	512	572
% App. Total	0.9	91	8.2		27.3	18.2	54.5		27.3	71.9	0.7		9.8	0.7	89.5	
PHF	.500	.917	.731	.920	.750	.500	.750	.917	.896	.907	.688	.904	.824	.333	.853	.841

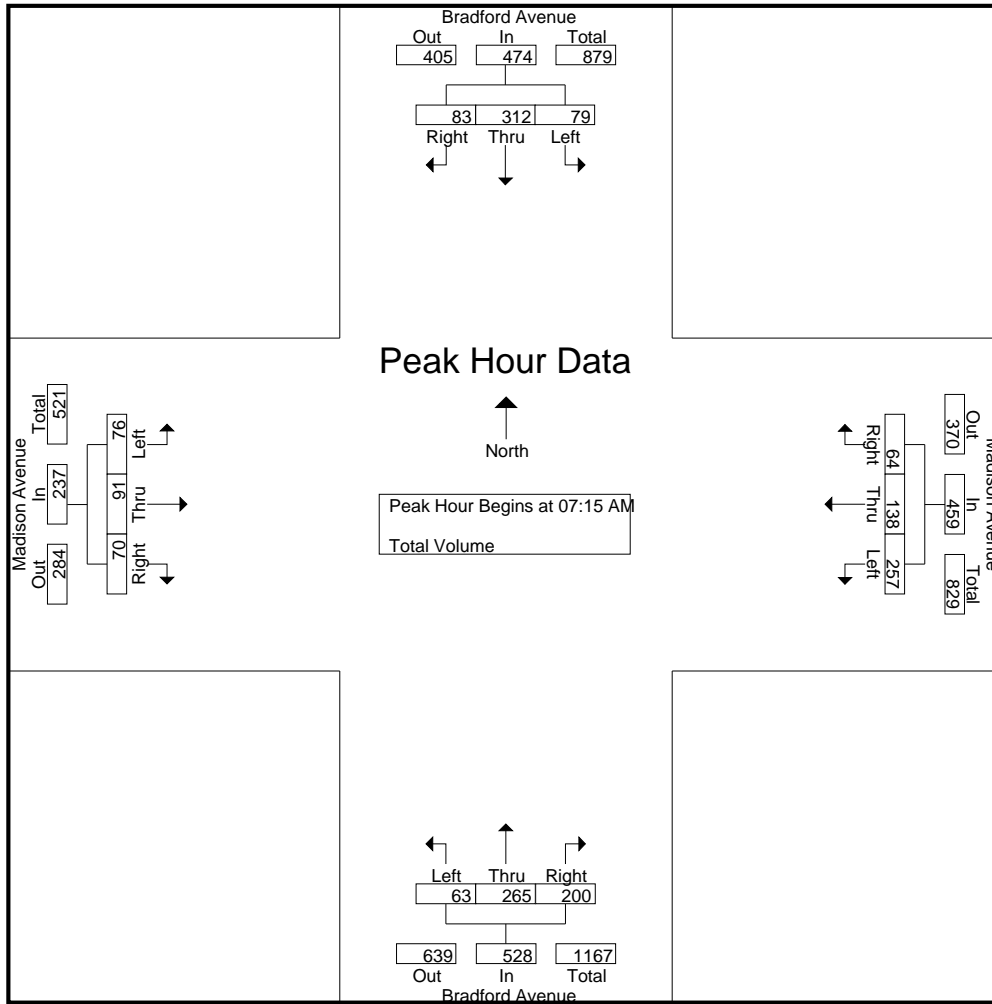
City of Placentia  
 N/S: Bradford Avenue  
 E/W: Madison Avenue  
 Weather: Clear

File Name : 16PLABRMAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Bradford Avenue Southbound				Madison Avenue Westbound				Bradford Avenue Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	15	49	14	78	14	25	2	41	4	26	10	40	6	18	6	30	189
07:15 AM	16	62	27	105	39	32	16	87	6	46	25	77	13	18	9	40	309
07:30 AM	16	91	21	128	104	30	20	154	23	71	65	159	34	28	17	79	520
07:45 AM	28	95	17	140	86	41	12	139	28	108	92	228	20	23	33	76	583
Total	75	297	79	451	243	128	50	421	61	251	192	504	73	87	65	225	1601
08:00 AM	19	64	18	101	28	35	16	79	6	40	18	64	9	22	11	42	286
08:15 AM	16	56	13	85	48	25	13	86	6	25	6	37	11	23	18	52	260
08:30 AM	17	44	17	78	23	22	10	55	5	35	16	56	16	27	8	51	240
08:45 AM	11	43	10	64	25	18	12	55	7	47	11	65	12	18	10	40	224
Total	63	207	58	328	124	100	51	275	24	147	51	222	48	90	47	185	1010
Grand Total	138	504	137	779	367	228	101	696	85	398	243	726	121	177	112	410	2611
Apprch %	17.7	64.7	17.6		52.7	32.8	14.5		11.7	54.8	33.5		29.5	43.2	27.3		
Total %	5.3	19.3	5.2	29.8	14.1	8.7	3.9	26.7	3.3	15.2	9.3	27.8	4.6	6.8	4.3	15.7	

Start Time	Bradford Avenue Southbound				Madison Avenue Westbound				Bradford Avenue Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	16	62	27	105	39	32	16	87	6	46	25	77	13	18	9	40	309
07:30 AM	16	91	21	128	104	30	20	154	23	71	65	159	34	28	17	79	520
07:45 AM	28	95	17	140	86	41	12	139	28	108	92	228	20	23	33	76	583
08:00 AM	19	64	18	101	28	35	16	79	6	40	18	64	9	22	11	42	286
Total Volume	79	312	83	474	257	138	64	459	63	265	200	528	76	91	70	237	1698
% App. Total	16.7	65.8	17.5		56	30.1	13.9		11.9	50.2	37.9		32.1	38.4	29.5		
PHF	.705	.821	.769	.846	.618	.841	.800	.745	.563	.613	.543	.579	.559	.813	.530	.750	.728



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:30 AM			
+0 mins.	16	62	<b>27</b>	105	39	32	16	87	6	46	25	77	<b>34</b>	<b>28</b>	17	<b>79</b>
+15 mins.	16	91	21	128	<b>104</b>	30	<b>20</b>	<b>154</b>	23	71	65	159	20	23	<b>33</b>	76
+30 mins.	<b>28</b>	<b>95</b>	17	<b>140</b>	86	<b>41</b>	12	139	<b>28</b>	<b>108</b>	<b>92</b>	<b>228</b>	9	22	11	42
+45 mins.	19	64	18	101	28	35	16	79	6	40	18	64	11	23	18	52
Total Volume	79	312	83	474	257	138	64	459	63	265	200	528	74	96	79	249
% App. Total	16.7	65.8	17.5		56	30.1	13.9		11.9	50.2	37.9		29.7	38.6	31.7	
PHF	.705	.821	.769	.846	.618	.841	.800	.745	.563	.613	.543	.579	.544	.857	.598	.788

City of Placentia  
 N/S: Bradford Avenue  
 E/W: Madison Avenue  
 Weather: Clear

File Name : 16PLABRMPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

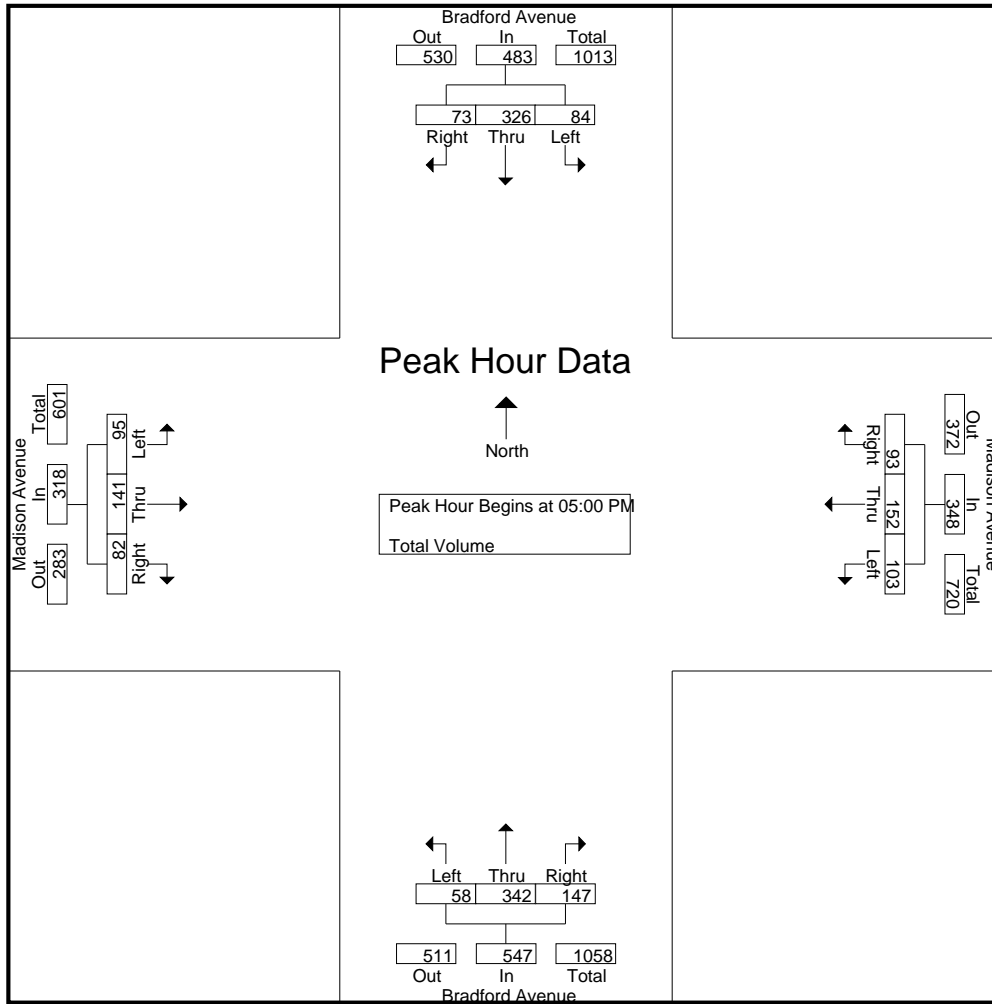
Groups Printed- Total Volume

Start Time	Bradford Avenue Southbound				Madison Avenue Westbound				Bradford Avenue Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	20	77	19	116	19	23	13	55	12	103	41	156	16	44	9	69	396
04:15 PM	14	55	15	84	11	16	12	39	7	79	31	117	22	31	10	63	303
04:30 PM	13	75	14	102	16	25	23	64	6	57	38	101	16	46	8	70	337
04:45 PM	10	70	10	90	14	23	24	61	7	94	34	135	26	36	13	75	361
Total	57	277	58	392	60	87	72	219	32	333	144	509	80	157	40	277	1397
05:00 PM	20	78	21	119	17	32	16	65	12	87	25	124	26	32	9	67	375
05:15 PM	19	77	20	116	30	50	22	102	19	90	44	153	24	34	31	89	460
05:30 PM	23	90	19	132	34	41	34	109	14	84	46	144	21	39	33	93	478
05:45 PM	22	81	13	116	22	29	21	72	13	81	32	126	24	36	9	69	383
Total	84	326	73	483	103	152	93	348	58	342	147	547	95	141	82	318	1696
Grand Total	141	603	131	875	163	239	165	567	90	675	291	1056	175	298	122	595	3093
Apprch %	16.1	68.9	15		28.7	42.2	29.1		8.5	63.9	27.6		29.4	50.1	20.5		
Total %	4.6	19.5	4.2	28.3	5.3	7.7	5.3	18.3	2.9	21.8	9.4	34.1	5.7	9.6	3.9	19.2	

Start Time	Bradford Avenue Southbound				Madison Avenue Westbound				Bradford Avenue Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	20	78	21	119	17	32	16	65	12	87	25	124	26	32	9	67	375
05:15 PM	19	77	20	116	30	50	22	102	19	90	44	153	24	34	31	89	460
05:30 PM	23	90	19	132	34	41	34	109	14	84	46	144	21	39	33	93	478
05:45 PM	22	81	13	116	22	29	21	72	13	81	32	126	24	36	9	69	383
Total Volume	84	326	73	483	103	152	93	348	58	342	147	547	95	141	82	318	1696
% App. Total	17.4	67.5	15.1		29.6	43.7	26.7		10.6	62.5	26.9		29.9	44.3	25.8		
PHF	.913	.906	.869	.915	.757	.760	.684	.798	.763	.950	.799	.894	.913	.904	.621	.855	.887

City of Placentia  
 N/S: Bradford Avenue  
 E/W: Madison Avenue  
 Weather: Clear

File Name : 16PLABRMPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:45 PM				04:45 PM			
+0 mins.	20	78	21	119	17	32	16	65	7	<b>94</b>	34	135	<b>26</b>	36	13	75
+15 mins.	19	77	20	116	30	<b>50</b>	22	102	12	87	25	124	26	32	9	67
+30 mins.	<b>23</b>	<b>90</b>	19	<b>132</b>	<b>34</b>	41	<b>34</b>	<b>109</b>	<b>19</b>	90	44	<b>153</b>	24	34	31	89
+45 mins.	22	81	13	116	22	29	21	72	14	84	<b>46</b>	144	21	<b>39</b>	<b>33</b>	<b>93</b>
Total Volume	84	326	73	483	103	152	93	348	52	355	149	556	97	141	86	324
% App. Total	17.4	67.5	15.1		29.6	43.7	26.7		9.4	63.8	26.8		29.9	43.5	26.5	
PHF	.913	.906	.869	.915	.757	.760	.684	.798	.684	.944	.810	.908	.933	.904	.652	.871

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Madison Avenue  
 Weather: Clear

File Name : 17PLAKRMAAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

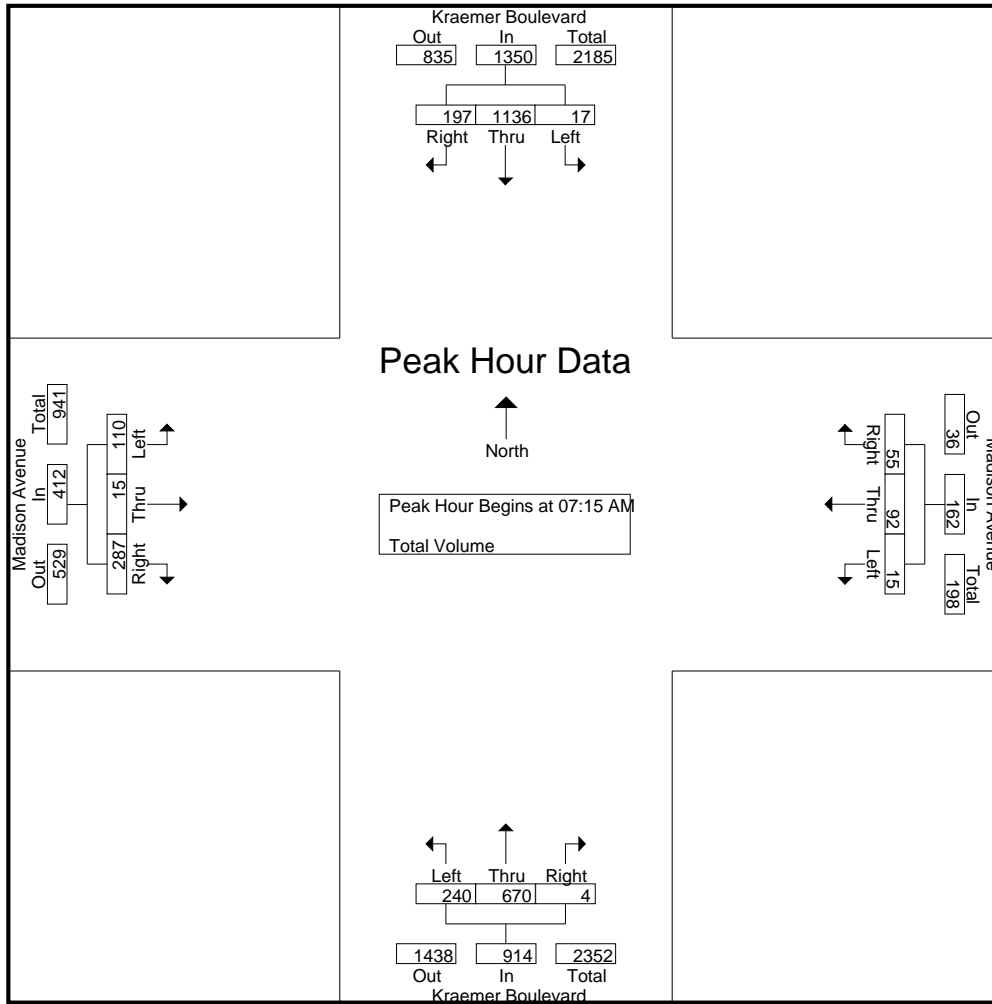
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Madison Avenue Westbound				Kraemer Boulevard Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	213	17	231	2	4	5	11	26	93	2	121	14	0	34	48	411
07:15 AM	2	243	43	288	3	12	6	21	49	134	1	184	13	1	45	59	552
07:30 AM	1	319	74	394	4	50	34	88	87	245	1	333	33	1	93	127	942
07:45 AM	7	318	42	367	4	20	7	31	68	157	1	226	43	12	106	161	785
Total	11	1093	176	1280	13	86	52	151	230	629	5	864	103	14	278	395	2690
08:00 AM	7	256	38	301	4	10	8	22	36	134	1	171	21	1	43	65	559
08:15 AM	1	241	38	280	0	3	8	11	42	134	2	178	10	0	37	47	516
08:30 AM	2	203	12	217	4	5	8	17	37	150	2	189	13	1	46	60	483
08:45 AM	3	200	15	218	4	2	4	10	38	154	1	193	12	2	23	37	458
Total	13	900	103	1016	12	20	28	60	153	572	6	731	56	4	149	209	2016
Grand Total	24	1993	279	2296	25	106	80	211	383	1201	11	1595	159	18	427	604	4706
Apprch %	1	86.8	12.2		11.8	50.2	37.9		24	75.3	0.7		26.3	3	70.7		
Total %	0.5	42.4	5.9	48.8	0.5	2.3	1.7	4.5	8.1	25.5	0.2	33.9	3.4	0.4	9.1	12.8	

Start Time	Kraemer Boulevard Southbound				Madison Avenue Westbound				Kraemer Boulevard Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	243	43	288	3	12	6	21	49	134	1	184	13	1	45	59	552
07:30 AM	1	319	74	394	4	50	34	88	87	245	1	333	33	1	93	127	942
07:45 AM	7	318	42	367	4	20	7	31	68	157	1	226	43	12	106	161	785
08:00 AM	7	256	38	301	4	10	8	22	36	134	1	171	21	1	43	65	559
Total Volume	17	1136	197	1350	15	92	55	162	240	670	4	914	110	15	287	412	2838
% App. Total	1.3	84.1	14.6		9.3	56.8	34		26.3	73.3	0.4		26.7	3.6	69.7		
PHF	.607	.890	.666	.857	.938	.460	.404	.460	.690	.684	1.00	.686	.640	.313	.677	.640	.753

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Madison Avenue  
 Weather: Clear

File Name : 17PLAKRMAAM  
 Site Code : 22117718  
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	2	243	43	288	3	12	6	21	49	134	1	184	13	1	45	59
+15 mins.	1	<b>319</b>	<b>74</b>	<b>394</b>	<b>4</b>	<b>50</b>	<b>34</b>	<b>88</b>	<b>87</b>	<b>245</b>	1	<b>333</b>	33	1	93	127
+30 mins.	<b>7</b>	318	42	367	4	20	7	31	68	157	1	226	<b>43</b>	<b>12</b>	<b>106</b>	<b>161</b>
+45 mins.	7	256	38	301	4	10	8	22	36	134	1	171	21	1	43	65
Total Volume	17	1136	197	1350	15	92	55	162	240	670	4	914	110	15	287	412
% App. Total	1.3	84.1	14.6		9.3	56.8	34		26.3	73.3	0.4		26.7	3.6	69.7	
PHF	.607	.890	.666	.857	.938	.460	.404	.460	.690	.684	1.000	.686	.640	.313	.677	.640



City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Madison Avenue  
 Weather: Clear

File Name : 17PLAKRMAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Madison Avenue Westbound				Kraemer Boulevard Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	10	189	18	217	2	1	4	7	35	240	0	275	41	6	52	99	598
04:15 PM	5	185	12	202	0	2	4	6	25	229	1	255	28	7	51	86	549
04:30 PM	6	177	26	209	5	1	2	8	39	227	2	268	36	4	55	95	580
04:45 PM	7	202	21	230	1	1	6	8	42	256	1	299	34	9	40	83	620
Total	28	753	77	858	8	5	16	29	141	952	4	1097	139	26	198	363	2347
05:00 PM	9	195	20	224	1	4	0	5	49	275	1	325	40	3	49	92	646
05:15 PM	9	202	30	241	1	3	7	11	58	268	2	328	35	12	51	98	678
05:30 PM	7	185	38	230	1	7	2	10	64	259	2	325	33	4	68	105	670
05:45 PM	6	176	32	214	1	6	5	12	52	237	1	290	24	6	52	82	598
Total	31	758	120	909	4	20	14	38	223	1039	6	1268	132	25	220	377	2592
Grand Total	59	1511	197	1767	12	25	30	67	364	1991	10	2365	271	51	418	740	4939
Apprch %	3.3	85.5	11.1		17.9	37.3	44.8		15.4	84.2	0.4		36.6	6.9	56.5		
Total %	1.2	30.6	4	35.8	0.2	0.5	0.6	1.4	7.4	40.3	0.2	47.9	5.5	1	8.5	15	

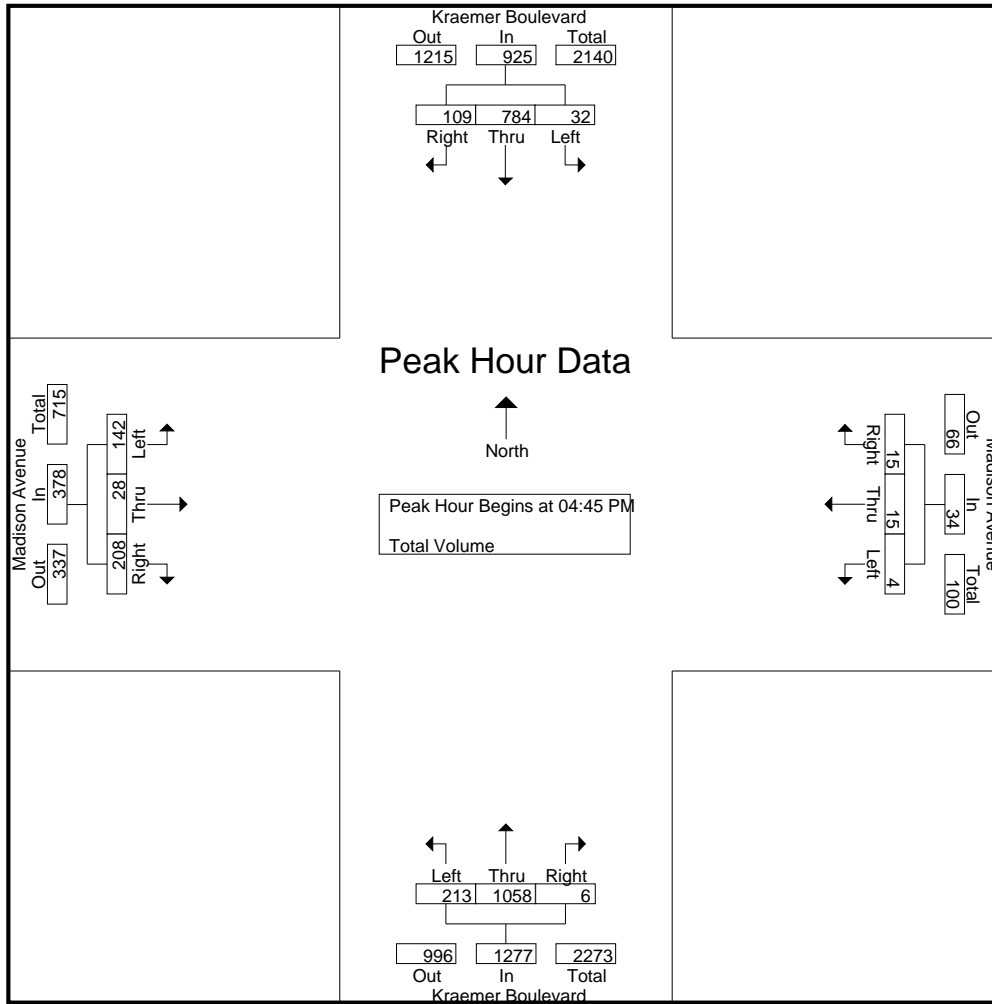
Start Time	Kraemer Boulevard Southbound				Madison Avenue Westbound				Kraemer Boulevard Northbound				Madison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:45 PM	7	<b>202</b>	21	230	1	1	6	8	42	256	1	299	34	9	40	83	620
05:00 PM	9	195	20	224	1	4	0	5	49	<b>275</b>	1	325	<b>40</b>	3	49	92	646
05:15 PM	9	202	30	<b>241</b>	1	3	7	<b>11</b>	58	268	2	<b>328</b>	35	<b>12</b>	51	98	<b>678</b>
05:30 PM	7	185	<b>38</b>	230	1	<b>7</b>	2	10	<b>64</b>	259	2	325	33	4	<b>68</b>	<b>105</b>	670
Total Volume	32	784	109	925	4	15	15	34	213	1058	6	1277	142	28	208	378	2614
% App. Total	3.5	84.8	11.8		11.8	44.1	44.1		16.7	82.9	0.5		37.6	7.4	55		
PHF	.889	.970	.717	.960	1.00	.536	.536	.773	.832	.962	.750	.973	.888	.583	.765	.900	.964

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Madison Avenue  
 Weather: Clear

File Name : 17PLAKRMAPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				04:45 PM			
+0 mins.	7	<b>202</b>	21	230	1	4	0	5	42	256	1	299	34	9	40	83
+15 mins.	<b>9</b>	195	20	224	1	3	<b>7</b>	11	49	<b>275</b>	1	325	<b>40</b>	3	49	92
+30 mins.	9	202	30	<b>241</b>	1	<b>7</b>	2	10	58	268	<b>2</b>	<b>328</b>	35	<b>12</b>	51	98
+45 mins.	7	185	<b>38</b>	230	1	6	5	<b>12</b>	<b>64</b>	259	2	325	33	4	<b>68</b>	<b>105</b>
Total Volume	32	784	109	925	4	20	14	38	213	1058	6	1277	142	28	208	378
% App. Total	3.5	84.8	11.8		10.5	52.6	36.8		16.7	82.9	0.5		37.6	7.4	55	
PHF	.889	.970	.717	.960	1.000	.714	.500	.792	.832	.962	.750	.973	.888	.583	.765	.900

City of Placentia  
 N/S: Rose Drive  
 E/W: Buena Vista Avenue  
 Weather: Clear

File Name : 18PLAROBVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Rose Drive Southbound			Buena Vista Avenue Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	15	321	336	56	34	90	107	13	120	546
07:15 AM	22	347	369	65	47	112	159	29	188	669
07:30 AM	36	432	468	104	85	189	240	69	309	966
07:45 AM	45	479	524	101	64	165	251	36	287	976
Total	118	1579	1697	326	230	556	757	147	904	3157
08:00 AM	31	386	417	56	46	102	166	35	201	720
08:15 AM	27	379	406	54	45	99	178	28	206	711
08:30 AM	11	329	340	56	45	101	164	33	197	638
08:45 AM	21	294	315	40	60	100	176	31	207	622
Total	90	1388	1478	206	196	402	684	127	811	2691
Grand Total	208	2967	3175	532	426	958	1441	274	1715	5848
Apprch %	6.6	93.4		55.5	44.5		84	16		
Total %	3.6	50.7	54.3	9.1	7.3	16.4	24.6	4.7	29.3	

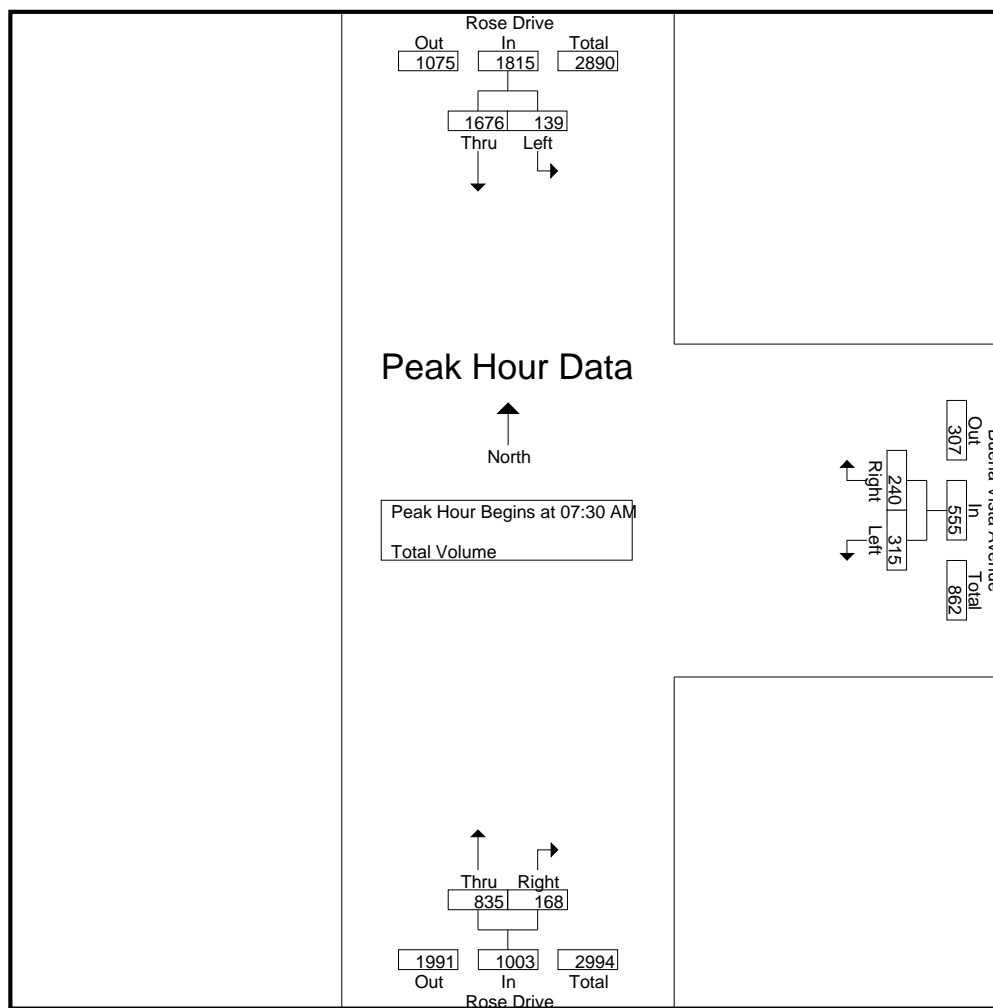
Start Time	Rose Drive Southbound			Buena Vista Avenue Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:30 AM	36	432	468	<b>104</b>	<b>85</b>	<b>189</b>	240	<b>69</b>	<b>309</b>	966
07:45 AM	<b>45</b>	<b>479</b>	<b>524</b>	101	64	165	<b>251</b>	36	287	<b>976</b>
08:00 AM	31	386	417	56	46	102	166	35	201	720
08:15 AM	27	379	406	54	45	99	178	28	206	711
Total Volume	139	1676	1815	315	240	555	835	168	1003	3373
% App. Total	7.7	92.3		56.8	43.2		83.3	16.7		
PHF	.772	.875	.866	.757	.706	.734	.832	.609	.811	.864

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Placentia  
 N/S: Rose Drive  
 E/W: Buena Vista Avenue  
 Weather: Clear

File Name : 18PLAROBVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:15 AM			07:30 AM		
+0 mins.	36	432	468	65	47	112	240	<b>69</b>	<b>309</b>
+15 mins.	<b>45</b>	<b>479</b>	<b>524</b>	<b>104</b>	<b>85</b>	<b>189</b>	<b>251</b>	36	287
+30 mins.	31	386	417	101	64	165	166	35	201
+45 mins.	27	379	406	56	46	102	178	28	206
Total Volume	139	1676	1815	326	242	568	835	168	1003
% App. Total	7.7	92.3		57.4	42.6		83.3	16.7	
PHF	.772	.875	.866	.784	.712	.751	.832	.609	.811

City of Placentia  
 N/S: Rose Drive  
 E/W: Buena Vista Avenue  
 Weather: Clear

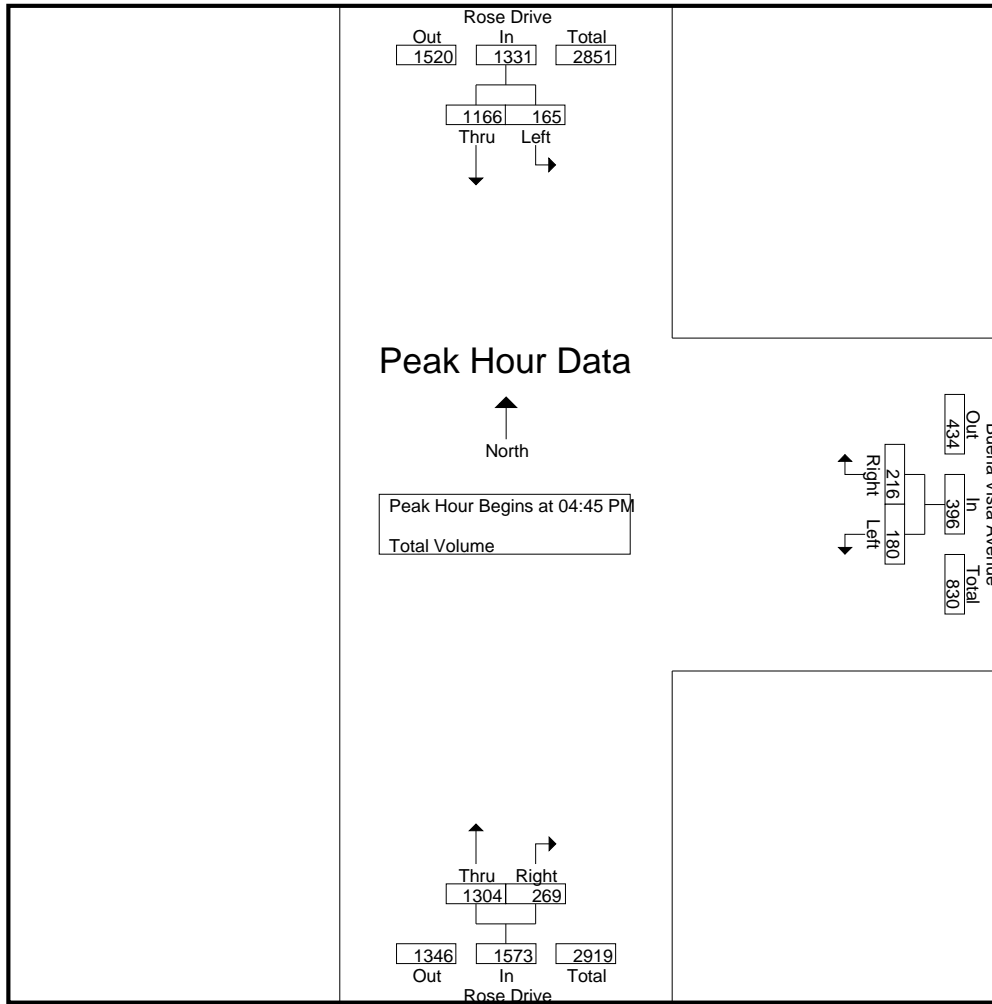
File Name : 18PLAROBVPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Rose Drive Southbound			Buena Vista Avenue Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	30	292	322	37	54	91	268	53	321	734
04:15 PM	39	277	316	27	40	67	265	67	332	715
04:30 PM	43	284	327	45	46	91	303	57	360	778
04:45 PM	41	307	348	41	53	94	324	63	387	829
Total	153	1160	1313	150	193	343	1160	240	1400	3056
05:00 PM	44	296	340	40	61	101	353	65	418	859
05:15 PM	49	298	347	46	49	95	305	72	377	819
05:30 PM	31	265	296	53	53	106	322	69	391	793
05:45 PM	51	250	301	45	42	87	309	66	375	763
Total	175	1109	1284	184	205	389	1289	272	1561	3234
Grand Total	328	2269	2597	334	398	732	2449	512	2961	6290
Apprch %	12.6	87.4		45.6	54.4		82.7	17.3		
Total %	5.2	36.1	41.3	5.3	6.3	11.6	38.9	8.1	47.1	

Start Time	Rose Drive Southbound			Buena Vista Avenue Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:45 PM	41	<b>307</b>	<b>348</b>	41	53	94	324	63	387	829
05:00 PM	44	296	340	40	<b>61</b>	101	<b>353</b>	65	<b>418</b>	<b>859</b>
05:15 PM	<b>49</b>	298	347	46	49	95	305	<b>72</b>	377	819
05:30 PM	31	265	296	<b>53</b>	53	<b>106</b>	322	69	391	793
Total Volume	165	1166	1331	180	216	396	1304	269	1573	3300
% App. Total	12.4	87.6		45.5	54.5		82.9	17.1		
PHF	.842	.950	.956	.849	.885	.934	.924	.934	.941	.960

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:45 PM



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:45 PM		
+0 mins.	43	284	327	41	53	94	324	63	387
+15 mins.	41	<b>307</b>	<b>348</b>	40	<b>61</b>	101	<b>353</b>	65	<b>418</b>
+30 mins.	44	296	340	46	49	95	305	<b>72</b>	377
+45 mins.	<b>49</b>	298	347	<b>53</b>	53	<b>106</b>	322	69	391
Total Volume	177	1185	1362	180	216	396	1304	269	1573
% App. Total	13	87		45.5	54.5		82.9	17.1	
PHF	.903	.965	.978	.849	.885	.934	.924	.934	.941

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Nutwood Avenue / Primrose Avenue  
 Weather: Clear

File Name : 19PLAPLNUAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

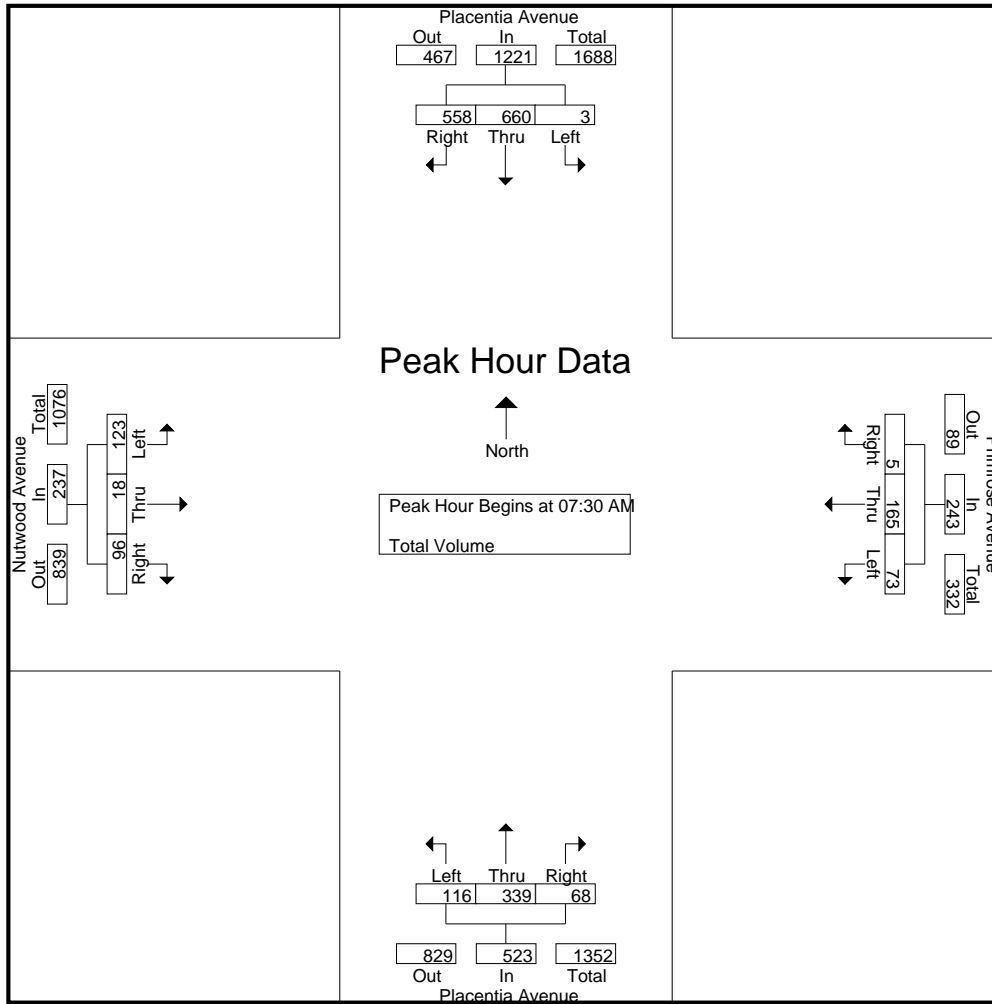
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Primrose Avenue Westbound				Placentia Avenue Northbound				Nutwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	154	93	247	5	10	0	15	20	47	0	67	30	3	22	55	384
07:15 AM	1	164	123	288	7	16	4	27	21	68	6	95	21	6	15	42	452
07:30 AM	1	165	150	316	27	51	3	81	36	102	33	171	24	5	18	47	615
07:45 AM	0	209	151	360	29	55	1	85	24	87	18	129	24	3	24	51	625
Total	2	692	517	1211	68	132	8	208	101	304	57	462	99	17	79	195	2076
08:00 AM	2	142	145	289	13	31	1	45	29	74	11	114	30	5	26	61	509
08:15 AM	0	144	112	256	4	28	0	32	27	76	6	109	45	5	28	78	475
08:30 AM	0	109	95	204	8	11	0	19	21	78	4	103	38	6	26	70	396
08:45 AM	1	97	84	182	7	12	1	20	14	70	2	86	38	3	23	64	352
Total	3	492	436	931	32	82	2	116	91	298	23	412	151	19	103	273	1732
Grand Total	5	1184	953	2142	100	214	10	324	192	602	80	874	250	36	182	468	3808
Apprch %	0.2	55.3	44.5		30.9	66	3.1		22	68.9	9.2		53.4	7.7	38.9		
Total %	0.1	31.1	25	56.2	2.6	5.6	0.3	8.5	5	15.8	2.1	23	6.6	0.9	4.8	12.3	

Start Time	Placentia Avenue Southbound				Primrose Avenue Westbound				Placentia Avenue Northbound				Nutwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	165	150	316	27	51	3	81	36	102	33	171	24	5	18	47	615
07:45 AM	0	209	151	360	29	55	1	85	24	87	18	129	24	3	24	51	625
08:00 AM	2	142	145	289	13	31	1	45	29	74	11	114	30	5	26	61	509
08:15 AM	0	144	112	256	4	28	0	32	27	76	6	109	45	5	28	78	475
Total Volume	3	660	558	1221	73	165	5	243	116	339	68	523	123	18	96	237	2224
% App. Total	0.2	54.1	45.7		30	67.9	2.1		22.2	64.8	13		51.9	7.6	40.5		
PHF	.375	.789	.924	.848	.629	.750	.417	.715	.806	.831	.515	.765	.683	.900	.857	.760	.890

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Nutwood Avenue / Primrose Avenue  
 Weather: Clear

File Name : 19PLAPLNUAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				08:00 AM			
+0 mins.	1	164	123	288	27	51	3	81	<b>36</b>	<b>102</b>	<b>33</b>	<b>171</b>	30	5	26	61
+15 mins.	1	165	150	316	<b>29</b>	<b>55</b>	1	<b>85</b>	24	87	18	129	<b>45</b>	5	<b>28</b>	<b>78</b>
+30 mins.	0	<b>209</b>	<b>151</b>	<b>360</b>	13	31	1	45	29	74	11	114	38	<b>6</b>	26	70
+45 mins.	<b>2</b>	142	145	289	4	28	0	32	27	76	6	109	38	3	23	64
Total Volume	4	680	569	1253	73	165	5	243	116	339	68	523	151	19	103	273
% App. Total	0.3	54.3	45.4		30	67.9	2.1		22.2	64.8	13		55.3	7	37.7	
PHF	.500	.813	.942	.870	.629	.750	.417	.715	.806	.831	.515	.765	.839	.792	.920	.875



City of Placentia  
 N/S: Placentia Avenue  
 E/W: Nutwood Avenue / Primrose Avenue  
 Weather: Clear

File Name : 19PLAPLNUPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

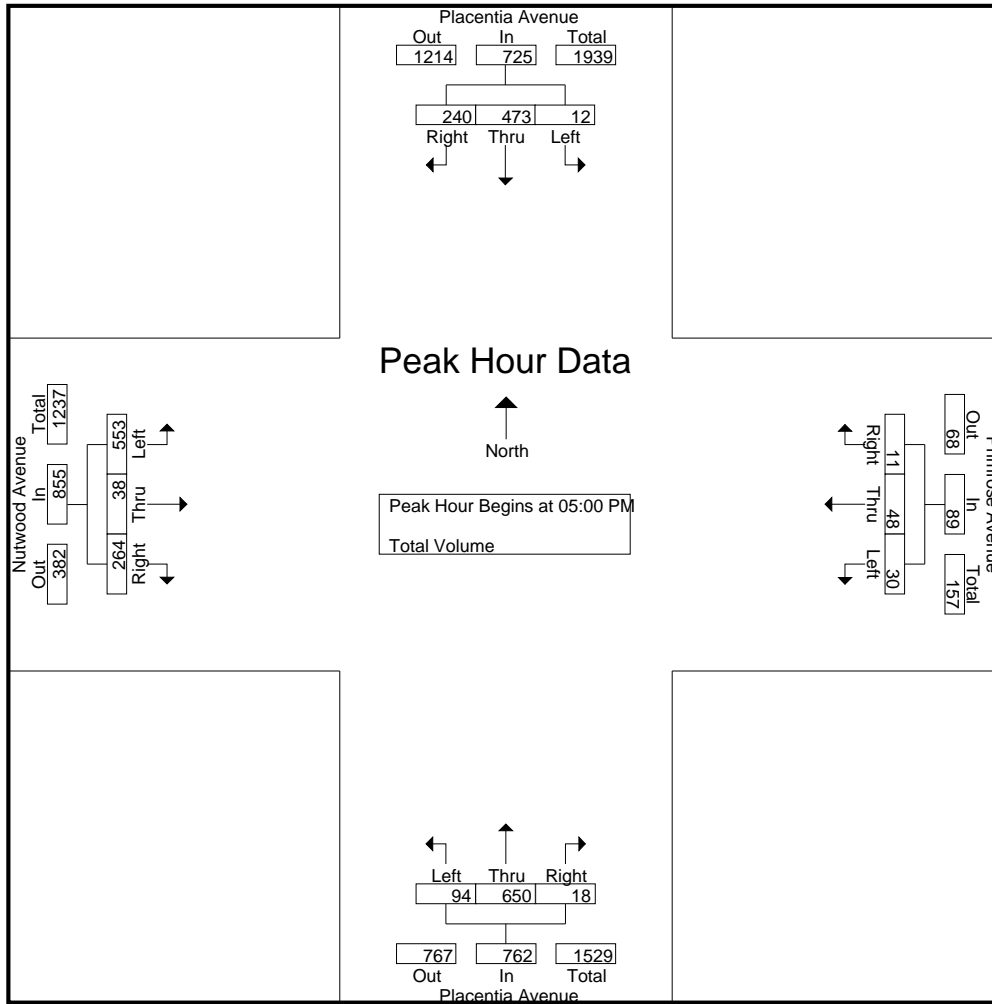
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Primrose Avenue Westbound				Placentia Avenue Northbound				Nutwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	2	135	43	180	5	12	2	19	23	170	8	201	87	10	67	164	564
04:15 PM	1	152	56	209	6	8	1	15	25	132	2	159	111	14	47	172	555
04:30 PM	0	129	72	201	2	9	2	13	27	142	3	172	102	9	35	146	532
04:45 PM	4	118	70	192	8	10	4	22	30	163	6	199	120	10	56	186	599
Total	7	534	241	782	21	39	9	69	105	607	19	731	420	43	205	668	2250
05:00 PM	1	113	77	191	4	14	2	20	24	152	6	182	119	9	51	179	572
05:15 PM	6	93	43	142	8	8	2	18	30	187	6	223	148	11	67	226	609
05:30 PM	1	130	60	191	7	15	3	25	20	150	4	174	144	10	84	238	628
05:45 PM	4	137	60	201	11	11	4	26	20	161	2	183	142	8	62	212	622
Total	12	473	240	725	30	48	11	89	94	650	18	762	553	38	264	855	2431
Grand Total	19	1007	481	1507	51	87	20	158	199	1257	37	1493	973	81	469	1523	4681
Apprch %	1.3	66.8	31.9		32.3	55.1	12.7		13.3	84.2	2.5		63.9	5.3	30.8		
Total %	0.4	21.5	10.3	32.2	1.1	1.9	0.4	3.4	4.3	26.9	0.8	31.9	20.8	1.7	10	32.5	

Start Time	Placentia Avenue Southbound				Primrose Avenue Westbound				Placentia Avenue Northbound				Nutwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	113	<b>77</b>	191	4	14	2	20	24	152	<b>6</b>	182	119	9	51	179	572
05:15 PM	<b>6</b>	93	43	142	8	8	2	18	<b>30</b>	<b>187</b>	6	<b>223</b>	<b>148</b>	<b>11</b>	67	226	609
05:30 PM	1	130	60	191	7	<b>15</b>	3	25	20	150	4	174	144	10	<b>84</b>	<b>238</b>	<b>628</b>
05:45 PM	4	<b>137</b>	60	<b>201</b>	<b>11</b>	11	<b>4</b>	<b>26</b>	20	161	2	183	142	8	62	212	<b>622</b>
Total Volume	12	473	240	725	30	48	11	89	94	650	18	762	553	38	264	855	2431
% App. Total	1.7	65.2	33.1		33.7	53.9	12.4		12.3	85.3	2.4		64.7	4.4	30.9		
PHF	.500	.863	.779	.902	.682	.800	.688	.856	.783	.869	.750	.854	.934	.864	.786	.898	.968

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Nutwood Avenue / Primrose Avenue  
 Weather: Clear

File Name : 19PLAPLNUPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	1	<b>152</b>	56	<b>209</b>	4	14	2	20	<b>30</b>	163	<b>6</b>	199	119	9	51	179
+15 mins.	0	129	72	201	8	8	2	18	24	152	6	182	<b>148</b>	<b>11</b>	67	226
+30 mins.	<b>4</b>	118	70	192	7	<b>15</b>	3	25	30	<b>187</b>	6	<b>223</b>	144	10	<b>84</b>	<b>238</b>
+45 mins.	1	113	<b>77</b>	191	<b>11</b>	11	<b>4</b>	<b>26</b>	20	150	4	174	142	8	62	212
Total Volume	6	512	275	793	30	48	11	89	104	652	22	778	553	38	264	855
% App. Total	0.8	64.6	34.7		33.7	53.9	12.4		13.4	83.8	2.8		64.7	4.4	30.9	
PHF	.375	.842	.893	.949	.682	.800	.688	.856	.867	.872	.917	.872	.934	.864	.786	.898

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 20PLAKRAVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

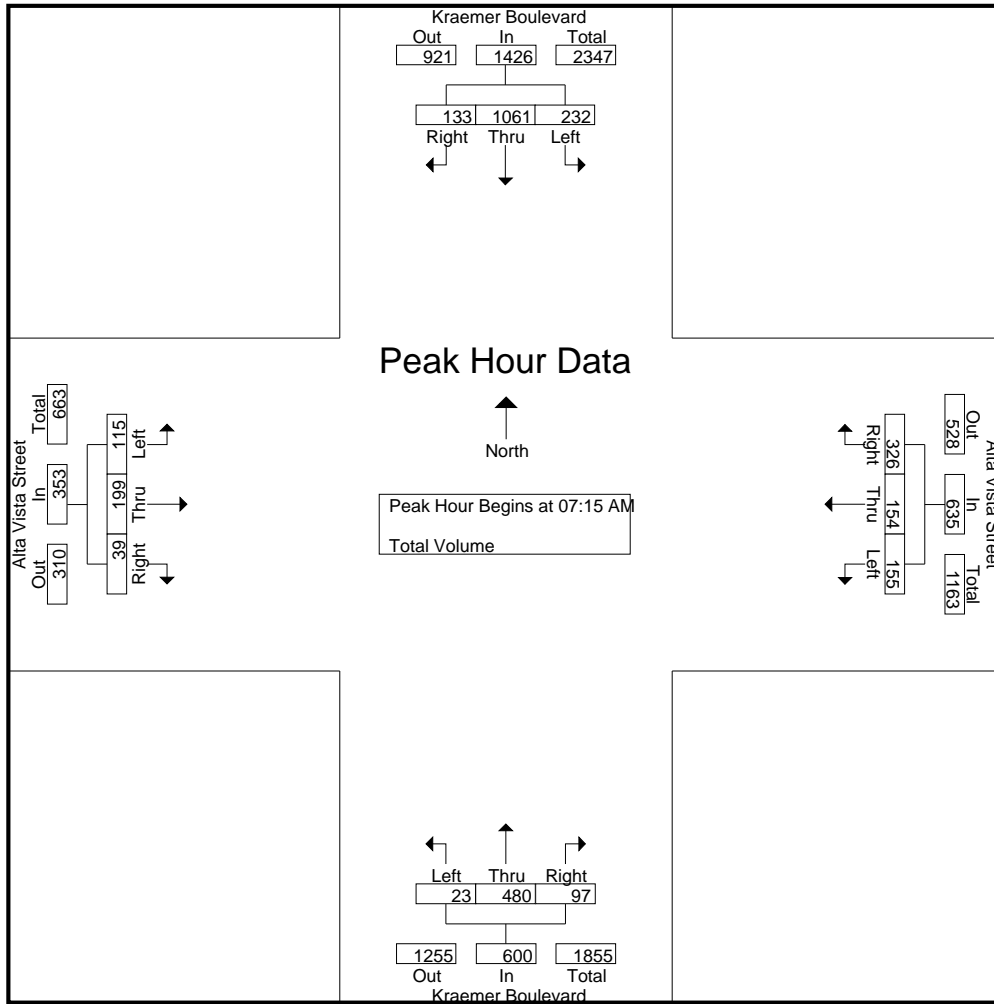
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Alta Vista Street Westbound				Kraemer Boulevard Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	30	192	6	228	43	13	51	107	1	64	12	77	10	8	3	21	433
07:15 AM	34	219	27	280	47	56	74	177	3	79	23	105	21	28	8	57	619
07:30 AM	66	288	53	407	32	48	109	189	7	195	20	222	34	66	13	113	931
07:45 AM	78	330	28	436	40	33	78	151	10	108	30	148	40	87	15	142	877
Total	208	1029	114	1351	162	150	312	624	21	446	85	552	105	189	39	333	2860
08:00 AM	54	224	25	303	36	17	65	118	3	98	24	125	20	18	3	41	587
08:15 AM	55	196	19	270	41	42	67	150	5	90	21	116	19	28	10	57	593
08:30 AM	38	185	46	269	39	59	61	159	4	94	25	123	31	43	8	82	633
08:45 AM	48	167	20	235	49	24	59	132	1	92	22	115	37	38	8	83	565
Total	195	772	110	1077	165	142	252	559	13	374	92	479	107	127	29	263	2378
Grand Total	403	1801	224	2428	327	292	564	1183	34	820	177	1031	212	316	68	596	5238
Apprch %	16.6	74.2	9.2		27.6	24.7	47.7		3.3	79.5	17.2		35.6	53	11.4		
Total %	7.7	34.4	4.3	46.4	6.2	5.6	10.8	22.6	0.6	15.7	3.4	19.7	4	6	1.3	11.4	

Start Time	Kraemer Boulevard Southbound				Alta Vista Street Westbound				Kraemer Boulevard Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	34	219	27	280	<b>47</b>	<b>56</b>	74	177	3	79	23	105	21	28	8	57	619
07:30 AM	66	288	<b>53</b>	407	32	48	<b>109</b>	<b>189</b>	7	<b>195</b>	20	<b>222</b>	34	66	13	113	<b>931</b>
07:45 AM	<b>78</b>	<b>330</b>	28	<b>436</b>	40	33	78	151	<b>10</b>	108	<b>30</b>	148	<b>40</b>	<b>87</b>	<b>15</b>	<b>142</b>	877
08:00 AM	54	224	25	303	36	17	65	118	3	98	24	125	20	18	3	41	587
Total Volume	232	1061	133	1426	155	154	326	635	23	480	97	600	115	199	39	353	3014
% App. Total	16.3	74.4	9.3		24.4	24.3	51.3		3.8	80	16.2		32.6	56.4	11		
PHF	.744	.804	.627	.818	.824	.688	.748	.840	.575	.615	.808	.676	.719	.572	.650	.621	.809

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 20PLAKRAVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:30 AM				07:15 AM			
+0 mins.	34	219	27	280	<b>47</b>	<b>56</b>	74	177	7	<b>195</b>	20	<b>222</b>	21	28	8	57
+15 mins.	66	288	<b>53</b>	407	32	48	<b>109</b>	<b>189</b>	<b>10</b>	108	<b>30</b>	148	34	66	13	113
+30 mins.	<b>78</b>	<b>330</b>	28	<b>436</b>	40	33	78	151	3	98	24	125	<b>40</b>	<b>87</b>	<b>15</b>	<b>142</b>
+45 mins.	54	224	25	303	36	17	65	118	5	90	21	116	20	18	3	41
Total Volume	232	1061	133	1426	155	154	326	635	25	491	95	611	115	199	39	353
% App. Total	16.3	74.4	9.3		24.4	24.3	51.3		4.1	80.4	15.5		32.6	56.4	11	
PHF	.744	.804	.627	.818	.824	.688	.748	.840	.625	.629	.792	.688	.719	.572	.650	.621

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 20PLAKRAVPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

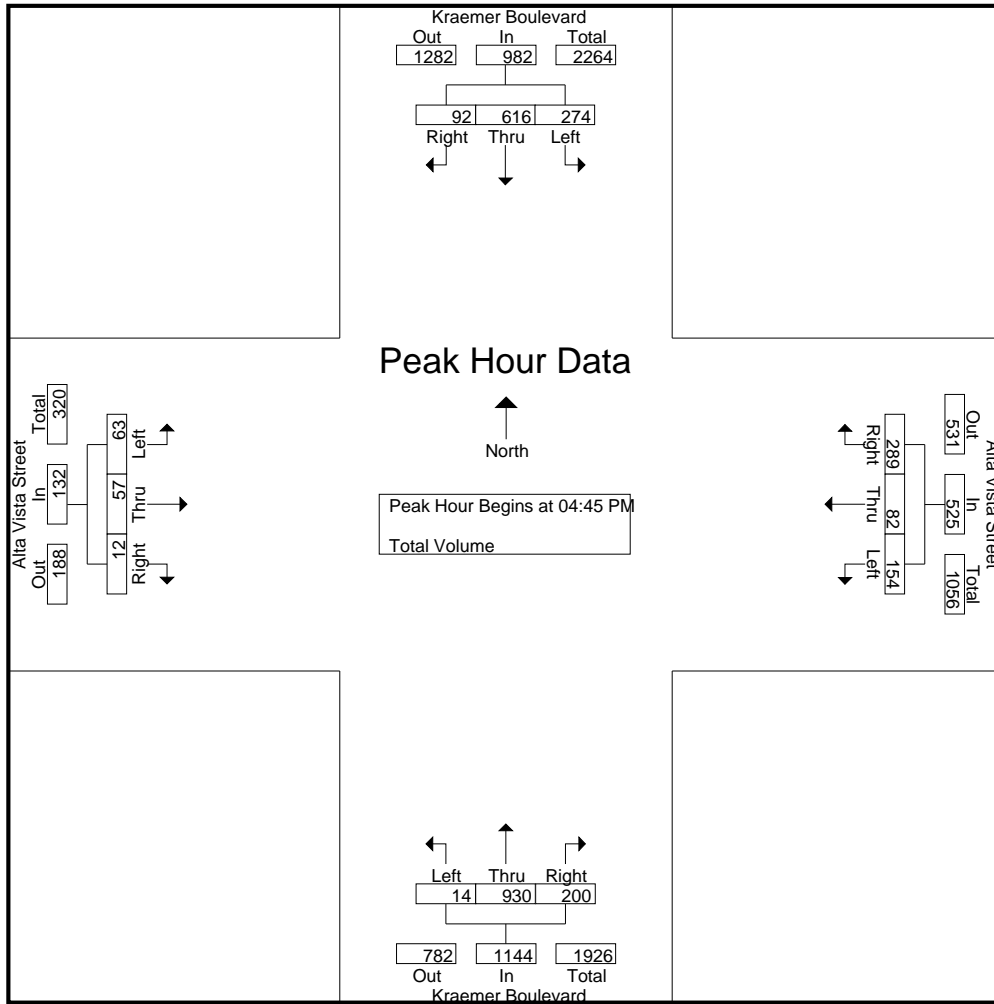
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Alta Vista Street Westbound				Kraemer Boulevard Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	55	156	17	228	44	13	64	121	3	199	38	240	13	18	5	36	625
04:15 PM	72	167	13	252	34	18	50	102	2	188	53	243	14	26	4	44	641
04:30 PM	69	159	16	244	31	22	58	111	3	182	44	229	19	19	1	39	623
04:45 PM	62	145	23	230	43	17	63	123	3	214	56	273	16	15	4	35	661
Total	258	627	69	954	152	70	235	457	11	783	191	985	62	78	14	154	2550
05:00 PM	64	152	18	234	36	12	79	127	0	225	47	272	13	7	4	24	657
05:15 PM	72	166	25	263	40	27	75	142	6	266	51	323	8	13	2	23	751
05:30 PM	76	153	26	255	35	26	72	133	5	225	46	276	26	22	2	50	714
05:45 PM	76	126	24	226	46	33	69	148	2	187	43	232	18	16	2	36	642
Total	288	597	93	978	157	98	295	550	13	903	187	1103	65	58	10	133	2764
Grand Total	546	1224	162	1932	309	168	530	1007	24	1686	378	2088	127	136	24	287	5314
Apprch %	28.3	63.4	8.4		30.7	16.7	52.6		1.1	80.7	18.1		44.3	47.4	8.4		
Total %	10.3	23	3	36.4	5.8	3.2	10	18.9	0.5	31.7	7.1	39.3	2.4	2.6	0.5	5.4	

Start Time	Kraemer Boulevard Southbound				Alta Vista Street Westbound				Kraemer Boulevard Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	62	145	23	230	43	17	63	123	3	214	56	273	16	15	4	35	661
05:00 PM	64	152	18	234	36	12	79	127	0	225	47	272	13	7	4	24	657
05:15 PM	72	166	25	263	40	27	75	142	6	266	51	323	8	13	2	23	751
05:30 PM	76	153	26	255	35	26	72	133	5	225	46	276	26	22	2	50	714
Total Volume	274	616	92	982	154	82	289	525	14	930	200	1144	63	57	12	132	2783
% App. Total	27.9	62.7	9.4		29.3	15.6	55		1.2	81.3	17.5		47.7	43.2	9.1		
PHF	.901	.928	.885	.933	.895	.759	.915	.924	.583	.874	.893	.885	.606	.648	.750	.660	.926

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 20PLAKRAVPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				04:00 PM			
+0 mins.	62	145	23	230	36	12	<b>79</b>	127	3	214	<b>56</b>	273	13	18	<b>5</b>	36
+15 mins.	64	152	18	234	40	27	75	142	0	225	47	272	14	<b>26</b>	4	<b>44</b>
+30 mins.	72	<b>166</b>	25	<b>263</b>	35	26	72	133	<b>6</b>	<b>266</b>	51	<b>323</b>	<b>19</b>	19	1	39
+45 mins.	<b>76</b>	153	<b>26</b>	255	<b>46</b>	<b>33</b>	69	<b>148</b>	5	225	46	276	16	15	4	35
Total Volume	274	616	92	982	157	98	295	550	14	930	200	1144	62	78	14	154
% App. Total	27.9	62.7	9.4		28.5	17.8	53.6		1.2	81.3	17.5		40.3	50.6	9.1	
PHF	.901	.928	.885	.933	.853	.742	.934	.929	.583	.874	.893	.885	.816	.750	.700	.875

City of Placentia  
 N/S: Rose Drive  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 21PLAROAVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

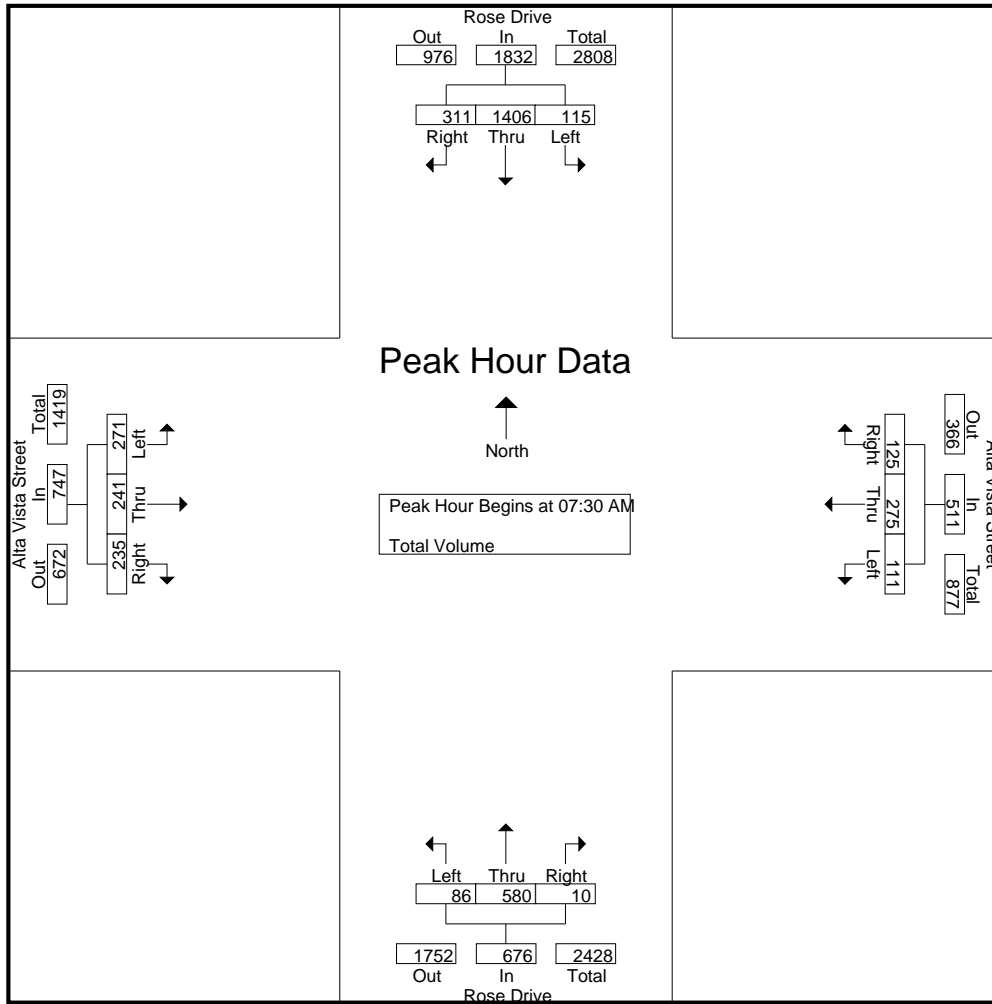
Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Alta Vista Street Westbound				Rose Drive Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	15	321	32	368	30	34	13	77	11	78	3	92	24	28	59	111	648
07:15 AM	10	285	67	362	19	82	25	126	15	104	2	121	48	30	56	134	743
07:30 AM	23	363	94	480	33	104	50	187	16	151	1	168	98	69	80	247	1082
07:45 AM	25	416	93	534	21	67	28	116	22	162	4	188	83	83	49	215	1053
Total	73	1385	286	1744	103	287	116	506	64	495	10	569	253	210	244	707	3526
08:00 AM	36	335	66	437	29	56	20	105	19	131	3	153	48	45	55	148	843
08:15 AM	31	292	58	381	28	48	27	103	29	136	2	167	42	44	51	137	788
08:30 AM	15	291	68	374	34	54	15	103	23	146	3	172	43	40	46	129	778
08:45 AM	16	236	40	292	27	44	17	88	24	140	3	167	53	49	40	142	689
Total	98	1154	232	1484	118	202	79	399	95	553	11	659	186	178	192	556	3098
Grand Total	171	2539	518	3228	221	489	195	905	159	1048	21	1228	439	388	436	1263	6624
Apprch %	5.3	78.7	16		24.4	54	21.5		12.9	85.3	1.7		34.8	30.7	34.5		
Total %	2.6	38.3	7.8	48.7	3.3	7.4	2.9	13.7	2.4	15.8	0.3	18.5	6.6	5.9	6.6	19.1	

Start Time	Rose Drive Southbound				Alta Vista Street Westbound				Rose Drive Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	23	363	94	480	33	104	50	187	16	151	1	168	98	69	80	247	1082
07:45 AM	25	416	93	534	21	67	28	116	22	162	4	188	83	83	49	215	1053
08:00 AM	36	335	66	437	29	56	20	105	19	131	3	153	48	45	55	148	843
08:15 AM	31	292	58	381	28	48	27	103	29	136	2	167	42	44	51	137	788
Total Volume	115	1406	311	1832	111	275	125	511	86	580	10	676	271	241	235	747	3766
% App. Total	6.3	76.7	17		21.7	53.8	24.5		12.7	85.8	1.5		36.3	32.3	31.5		
PHF	.799	.845	.827	.858	.841	.661	.625	.683	.741	.895	.625	.899	.691	.726	.734	.756	.870

City of Placentia  
 N/S: Rose Drive  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 21PLAROAVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:45 AM				07:30 AM			
+0 mins.	23	363	<b>94</b>	480	19	82	25	126	22	<b>162</b>	<b>4</b>	<b>188</b>	<b>98</b>	69	<b>80</b>	<b>247</b>
+15 mins.	25	<b>416</b>	93	<b>534</b>	<b>33</b>	<b>104</b>	<b>50</b>	<b>187</b>	19	131	3	153	83	<b>83</b>	49	215
+30 mins.	<b>36</b>	335	66	437	21	67	28	116	<b>29</b>	136	2	167	48	45	55	148
+45 mins.	31	292	58	381	29	56	20	105	23	146	3	172	42	44	51	137
Total Volume	115	1406	311	1832	102	309	123	534	93	575	12	680	271	241	235	747
% App. Total	6.3	76.7	17		19.1	57.9	23		13.7	84.6	1.8		36.3	32.3	31.5	
PHF	.799	.845	.827	.858	.773	.743	.615	.714	.802	.887	.750	.904	.691	.726	.734	.756



City of Placentia  
 N/S: Rose Drive  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 21PLAROAVPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

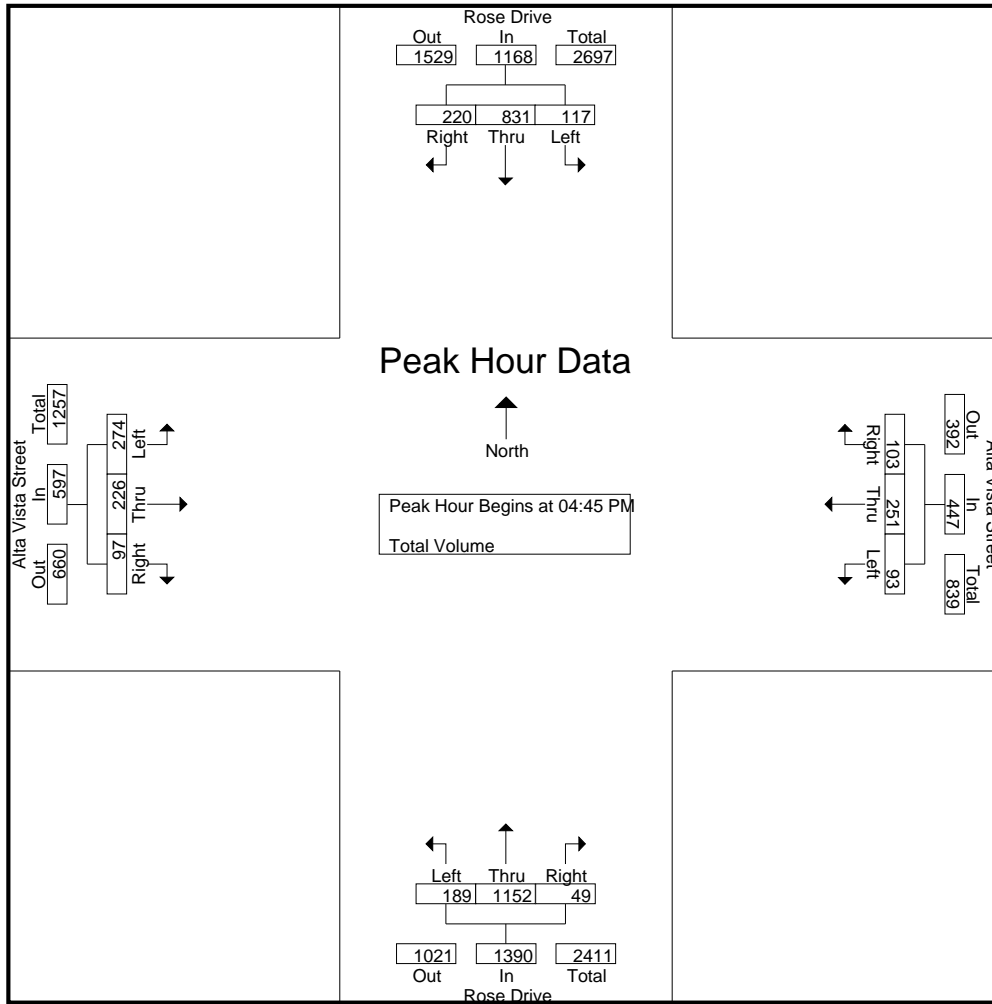
Groups Printed- Total Volume

Start Time	Rose Drive Southbound				Alta Vista Street Westbound				Rose Drive Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	24	209	33	266	22	45	29	96	36	236	11	283	48	47	28	123	768
04:15 PM	34	205	39	278	30	53	18	101	46	242	11	299	77	54	29	160	838
04:30 PM	31	202	51	284	20	65	22	107	46	245	7	298	68	41	25	134	823
04:45 PM	26	231	45	302	26	52	24	102	46	293	21	360	62	52	24	138	902
Total	115	847	168	1130	98	215	93	406	174	1016	50	1240	255	194	106	555	3331
05:00 PM	37	182	58	277	15	66	29	110	51	287	8	346	64	58	17	139	872
05:15 PM	32	236	59	327	27	66	20	113	39	298	14	351	77	52	28	157	948
05:30 PM	22	182	58	262	25	67	30	122	53	274	6	333	71	64	28	163	880
05:45 PM	33	162	53	248	24	56	28	108	54	270	9	333	54	59	32	145	834
Total	124	762	228	1114	91	255	107	453	197	1129	37	1363	266	233	105	604	3534
Grand Total	239	1609	396	2244	189	470	200	859	371	2145	87	2603	521	427	211	1159	6865
Apprch %	10.7	71.7	17.6		22	54.7	23.3		14.3	82.4	3.3		45	36.8	18.2		
Total %	3.5	23.4	5.8	32.7	2.8	6.8	2.9	12.5	5.4	31.2	1.3	37.9	7.6	6.2	3.1	16.9	

Start Time	Rose Drive Southbound				Alta Vista Street Westbound				Rose Drive Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	26	231	45	302	26	52	24	102	46	293	21	360	62	52	24	138	902
05:00 PM	37	182	58	277	15	66	29	110	51	287	8	346	64	58	17	139	872
05:15 PM	32	236	59	327	27	66	20	113	39	298	14	351	77	52	28	157	948
05:30 PM	22	182	58	262	25	67	30	122	53	274	6	333	71	64	28	163	880
Total Volume	117	831	220	1168	93	251	103	447	189	1152	49	1390	274	226	97	597	3602
% App. Total	10	71.1	18.8		20.8	56.2	23		13.6	82.9	3.5		45.9	37.9	16.2		
PHF	.791	.880	.932	.893	.861	.937	.858	.916	.892	.966	.583	.965	.890	.883	.866	.916	.950

City of Placentia  
 N/S: Rose Drive  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 21PLAROAVPM  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	31	202	51	284	15	66	29	110	46	293	21	360	64	58	17	139
+15 mins.	26	231	45	302	27	66	20	113	51	287	8	346	77	52	28	157
+30 mins.	37	182	58	277	25	67	30	122	39	298	14	351	71	64	28	163
+45 mins.	32	236	59	327	24	56	28	108	53	274	6	333	54	59	32	145
Total Volume	126	851	213	1190	91	255	107	453	189	1152	49	1390	266	233	105	604
% App. Total	10.6	71.5	17.9		20.1	56.3	23.6		13.6	82.9	3.5		44	38.6	17.4	
PHF	.851	.901	.903	.910	.843	.951	.892	.928	.892	.966	.583	.965	.864	.910	.820	.926

City of Placentia  
 N/S: Jefferson Street  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 22PLAJEAVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

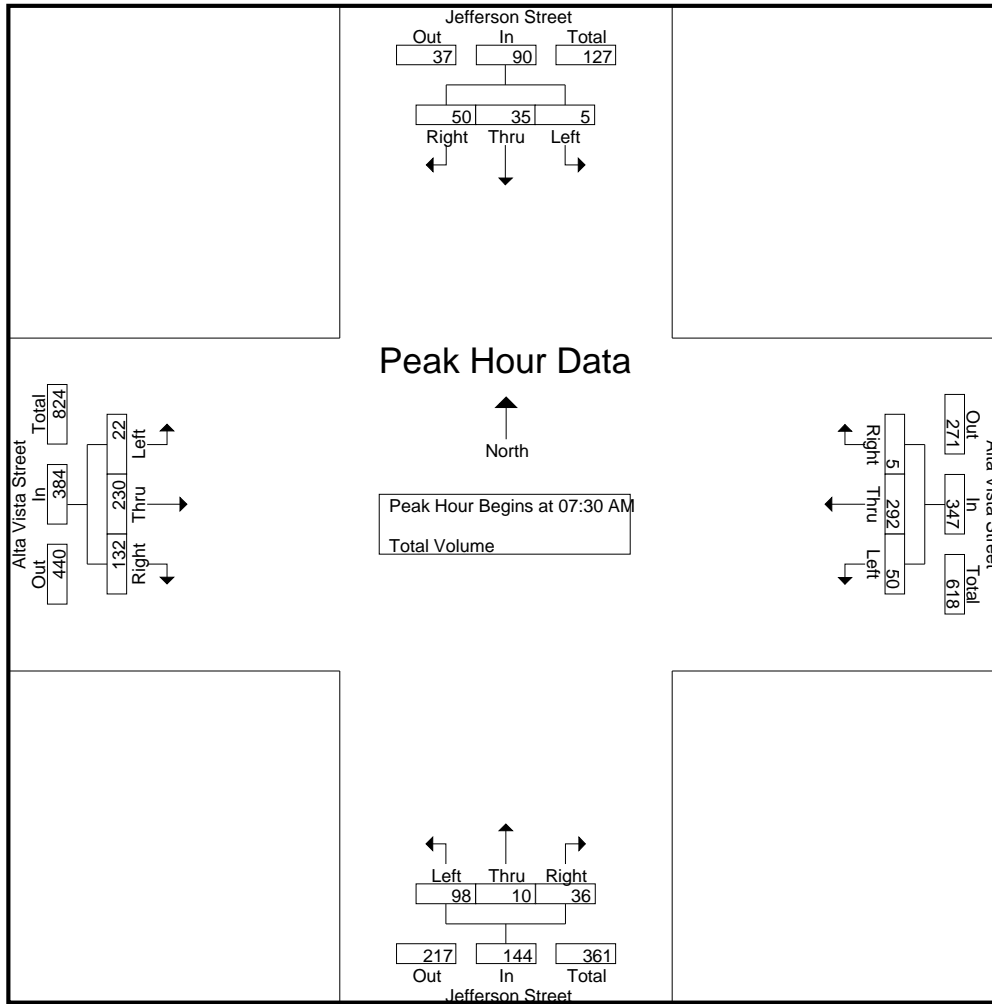
Groups Printed- Total Volume

Start Time	Jefferson Street Southbound				Alta Vista Street Westbound				Jefferson Street Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	10	9	19	5	41	0	46	20	3	6	29	2	27	25	54	148
07:15 AM	0	14	11	25	4	69	2	75	20	3	6	29	4	28	13	45	174
07:30 AM	1	7	22	30	14	109	3	126	47	4	14	65	4	49	34	87	308
07:45 AM	2	9	13	24	14	73	1	88	19	1	3	23	11	62	33	106	241
Total	3	40	55	98	37	292	6	335	106	11	29	146	21	166	105	292	871
08:00 AM	2	12	7	21	7	56	0	63	22	3	8	33	7	63	39	109	226
08:15 AM	0	7	8	15	15	54	1	70	10	2	11	23	0	56	26	82	190
08:30 AM	2	10	7	19	12	57	0	69	20	2	8	30	4	48	19	71	189
08:45 AM	1	8	12	21	8	46	0	54	14	3	6	23	4	48	17	69	167
Total	5	37	34	76	42	213	1	256	66	10	33	109	15	215	101	331	772
Grand Total	8	77	89	174	79	505	7	591	172	21	62	255	36	381	206	623	1643
Apprch %	4.6	44.3	51.1		13.4	85.4	1.2		67.5	8.2	24.3		5.8	61.2	33.1		
Total %	0.5	4.7	5.4	10.6	4.8	30.7	0.4	36	10.5	1.3	3.8	15.5	2.2	23.2	12.5	37.9	

Start Time	Jefferson Street Southbound				Alta Vista Street Westbound				Jefferson Street Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	7	22	30	14	109	3	126	47	4	14	65	4	49	34	87	308
07:45 AM	2	9	13	24	14	73	1	88	19	1	3	23	11	62	33	106	241
08:00 AM	2	12	7	21	7	56	0	63	22	3	8	33	7	63	39	109	226
08:15 AM	0	7	8	15	15	54	1	70	10	2	11	23	0	56	26	82	190
Total Volume	5	35	50	90	50	292	5	347	98	10	36	144	22	230	132	384	965
% App. Total	5.6	38.9	55.6		14.4	84.1	1.4		68.1	6.9	25		5.7	59.9	34.4		
PHF	.625	.729	.568	.750	.833	.670	.417	.688	.521	.625	.643	.554	.500	.913	.846	.881	.783

City of Placentia  
 N/S: Jefferson Street  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 22PLAJEAVAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:30 AM			
+0 mins.	0	14	11	25	4	69	2	75	20	3	6	29	4	49	34	87
+15 mins.	1	7	22	30	14	109	3	126	47	4	14	65	11	62	33	106
+30 mins.	2	9	13	24	14	73	1	88	19	1	3	23	7	63	39	109
+45 mins.	2	12	7	21	7	56	0	63	22	3	8	33	0	56	26	82
Total Volume	5	42	53	100	39	307	6	352	108	11	31	150	22	230	132	384
% App. Total	5	42	53		11.1	87.2	1.7		72	7.3	20.7		5.7	59.9	34.4	
PHF	.625	.750	.602	.833	.696	.704	.500	.698	.574	.688	.554	.577	.500	.913	.846	.881

City of Placentia  
 N/S: Jefferson Street  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 22PLAJEAVPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

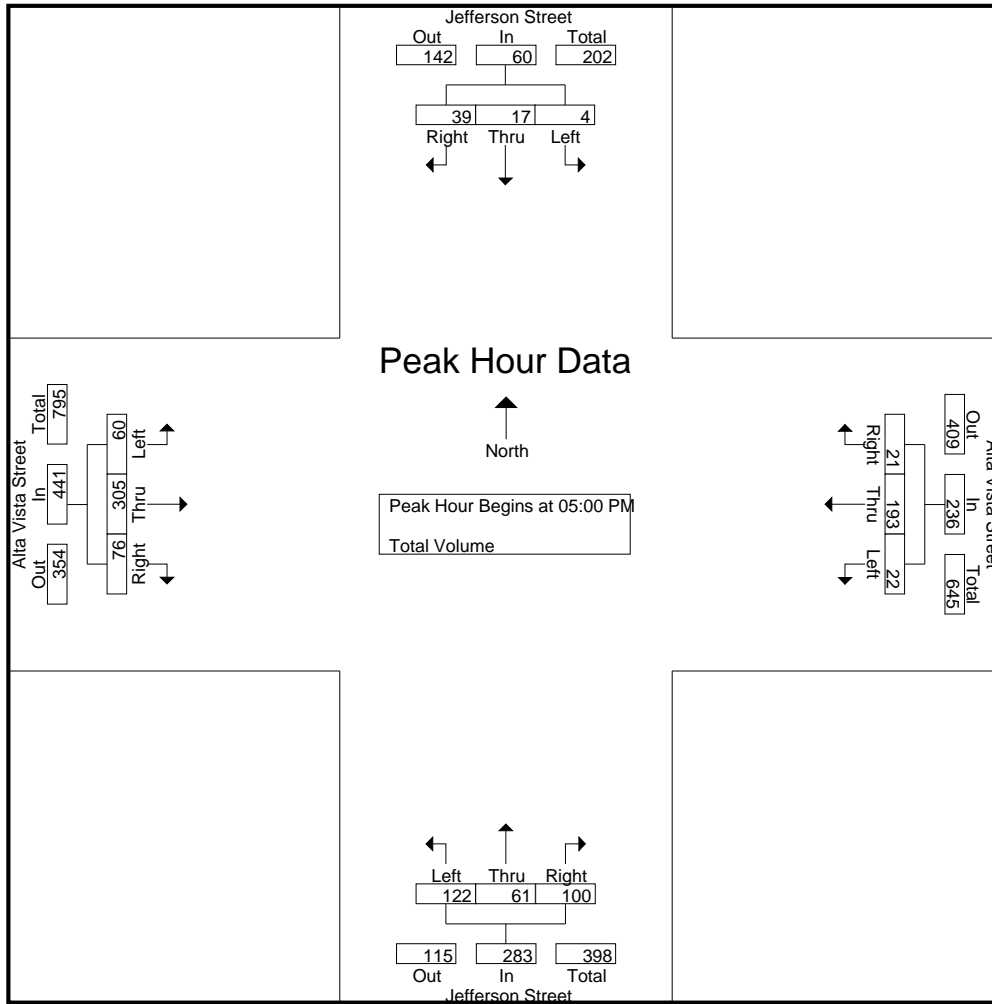
Groups Printed- Total Volume

Start Time	Jefferson Street Southbound				Alta Vista Street Westbound				Jefferson Street Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	1	2	4	7	4	53	5	62	23	5	20	48	6	65	26	97	214
04:15 PM	0	3	5	8	3	31	2	36	26	5	20	51	7	90	20	117	212
04:30 PM	2	1	5	8	5	43	1	49	38	13	30	81	15	59	19	93	231
04:45 PM	1	5	7	13	4	52	3	59	23	13	25	61	14	67	23	104	237
Total	4	11	21	36	16	179	11	206	110	36	95	241	42	281	88	411	894
05:00 PM	0	3	8	11	3	40	3	46	29	12	32	73	11	75	13	99	229
05:15 PM	2	5	9	16	3	54	7	64	37	11	26	74	12	80	17	109	263
05:30 PM	1	5	9	15	4	57	3	64	31	20	24	75	13	66	23	102	256
05:45 PM	1	4	13	18	12	42	8	62	25	18	18	61	24	84	23	131	272
Total	4	17	39	60	22	193	21	236	122	61	100	283	60	305	76	441	1020
Grand Total	8	28	60	96	38	372	32	442	232	97	195	524	102	586	164	852	1914
Apprch %	8.3	29.2	62.5		8.6	84.2	7.2		44.3	18.5	37.2		12	68.8	19.2		
Total %	0.4	1.5	3.1	5	2	19.4	1.7	23.1	12.1	5.1	10.2	27.4	5.3	30.6	8.6	44.5	

Start Time	Jefferson Street Southbound				Alta Vista Street Westbound				Jefferson Street Northbound				Alta Vista Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	3	8	11	3	40	3	46	29	12	32	73	11	75	13	99	229
05:15 PM	2	5	9	16	3	54	7	64	37	11	26	74	12	80	17	109	263
05:30 PM	1	5	9	15	4	57	3	64	31	20	24	75	13	66	23	102	256
05:45 PM	1	4	13	18	12	42	8	62	25	18	18	61	24	84	23	131	272
Total Volume	4	17	39	60	22	193	21	236	122	61	100	283	60	305	76	441	1020
% App. Total	6.7	28.3	65		9.3	81.8	8.9		43.1	21.6	35.3		13.6	69.2	17.2		
PHF	.500	.850	.750	.833	.458	.846	.656	.922	.824	.763	.781	.943	.625	.908	.826	.842	.938

City of Placentia  
 N/S: Jefferson Street  
 E/W: Alta Vista Street  
 Weather: Clear

File Name : 22PLAJEAVPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:30 PM				05:00 PM			
+0 mins.	0	3	8	11	3	40	3	46	<b>38</b>	<b>13</b>	30	<b>81</b>	11	75	13	99
+15 mins.	<b>2</b>	<b>5</b>	9	16	3	54	7	<b>64</b>	23	13	25	61	12	80	17	109
+30 mins.	1	5	9	15	4	<b>57</b>	3	64	29	12	<b>32</b>	73	13	66	<b>23</b>	102
+45 mins.	1	4	<b>13</b>	<b>18</b>	<b>12</b>	42	<b>8</b>	62	37	11	26	74	<b>24</b>	<b>84</b>	23	<b>131</b>
Total Volume	4	17	39	60	22	193	21	236	127	49	113	289	60	305	76	441
% App. Total	6.7	28.3	65		9.3	81.8	8.9		43.9	17	39.1		13.6	69.2	17.2	
PHF	.500	.850	.750	.833	.458	.846	.656	.922	.836	.942	.883	.892	.625	.908	.826	.842

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Champan Avenue  
 Weather: Clear

File Name : 23PLAPLCHAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

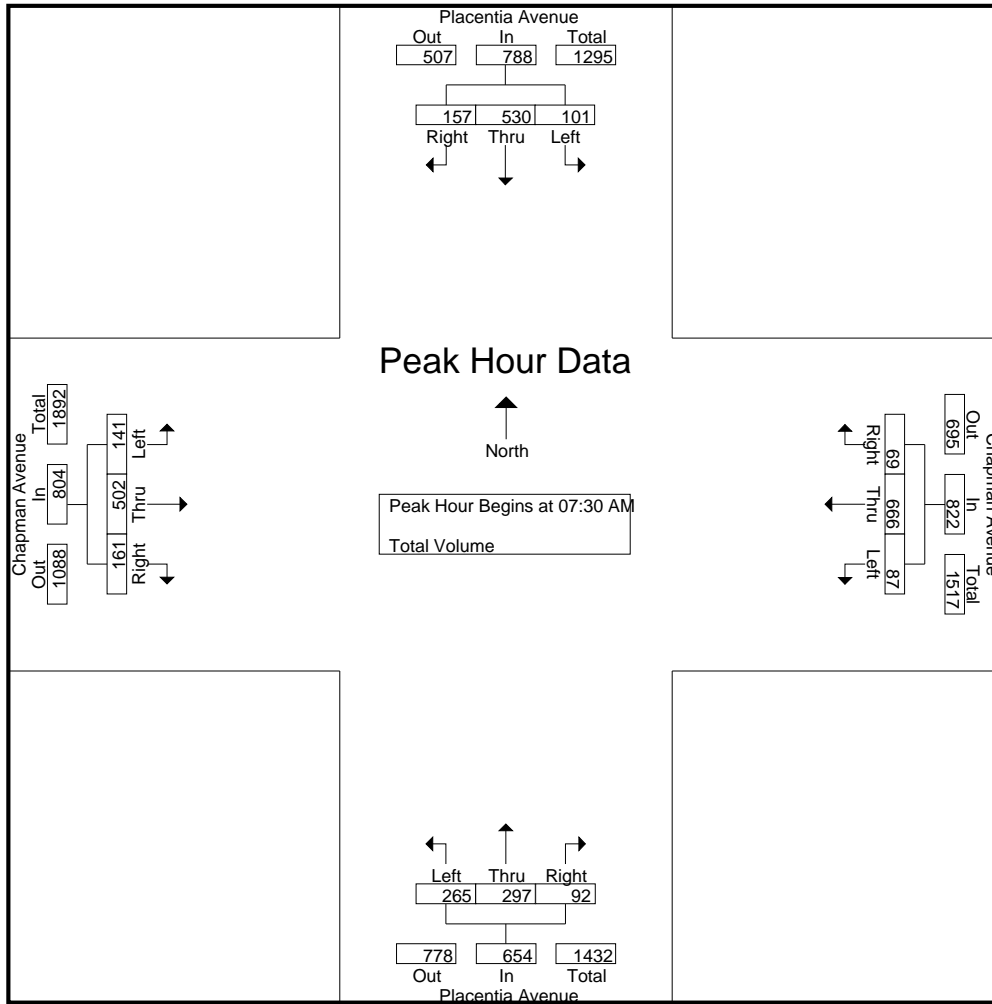
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Chapman Avenue Westbound				Placentia Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	14	107	49	170	12	138	10	160	43	43	10	96	13	96	34	143	569
07:15 AM	25	131	37	193	13	176	19	208	47	52	12	111	22	119	33	174	686
07:30 AM	22	132	40	194	16	170	14	200	68	103	28	199	36	130	44	210	803
07:45 AM	23	169	42	234	28	169	11	208	74	82	21	177	31	121	44	196	815
Total	84	539	168	791	69	653	54	776	232	280	71	583	102	466	155	723	2873
08:00 AM	32	113	44	189	23	165	21	209	67	55	23	145	38	125	32	195	738
08:15 AM	24	116	31	171	20	162	23	205	56	57	20	133	36	126	41	203	712
08:30 AM	22	96	30	148	18	159	16	193	55	51	16	122	28	131	52	211	674
08:45 AM	20	88	32	140	28	163	12	203	43	52	20	115	18	113	41	172	630
Total	98	413	137	648	89	649	72	810	221	215	79	515	120	495	166	781	2754
Grand Total	182	952	305	1439	158	1302	126	1586	453	495	150	1098	222	961	321	1504	5627
Apprch %	12.6	66.2	21.2		10	82.1	7.9		41.3	45.1	13.7		14.8	63.9	21.3		
Total %	3.2	16.9	5.4	25.6	2.8	23.1	2.2	28.2	8.1	8.8	2.7	19.5	3.9	17.1	5.7	26.7	

Start Time	Placentia Avenue Southbound				Chapman Avenue Westbound				Placentia Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	22	132	40	194	16	<b>170</b>	14	200	68	<b>103</b>	<b>28</b>	<b>199</b>	36	<b>130</b>	<b>44</b>	<b>210</b>	803
07:45 AM	23	<b>169</b>	42	<b>234</b>	<b>28</b>	169	11	208	<b>74</b>	82	21	177	31	121	44	196	<b>815</b>
08:00 AM	<b>32</b>	113	<b>44</b>	189	23	165	21	<b>209</b>	67	55	23	145	<b>38</b>	125	32	195	738
08:15 AM	24	116	31	171	20	162	<b>23</b>	205	56	57	20	133	36	126	41	203	712
Total Volume	101	530	157	788	87	666	69	822	265	297	92	654	141	502	161	804	3068
% App. Total	12.8	67.3	19.9		10.6	81	8.4		40.5	45.4	14.1		17.5	62.4	20		
PHF	.789	.784	.892	.842	.777	.979	.750	.983	.895	.721	.821	.822	.928	.965	.915	.957	.941

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Champan Avenue  
 Weather: Clear

File Name : 23PLAPLCHAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:30 AM				07:45 AM			
+0 mins.	25	131	37	193	13	<b>176</b>	19	208	68	<b>103</b>	<b>28</b>	<b>199</b>	31	121	44	196
+15 mins.	22	132	40	194	16	170	14	200	<b>74</b>	82	21	177	<b>38</b>	125	32	195
+30 mins.	23	<b>169</b>	42	<b>234</b>	<b>28</b>	169	11	208	67	55	23	145	36	126	41	203
+45 mins.	<b>32</b>	113	<b>44</b>	189	23	165	<b>21</b>	<b>209</b>	56	57	20	133	28	<b>131</b>	<b>52</b>	<b>211</b>
Total Volume	102	545	163	810	80	680	65	825	265	297	92	654	133	503	169	805
% App. Total	12.6	67.3	20.1		9.7	82.4	7.9		40.5	45.4	14.1		16.5	62.5	21	
PHF	.797	.806	.926	.865	.714	.966	.774	.987	.895	.721	.821	.822	.875	.960	.813	.954



City of Placentia  
 N/S: Placentia Avenue  
 E/W: Champan Avenue  
 Weather: Clear

File Name : 23PLAPLCHPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

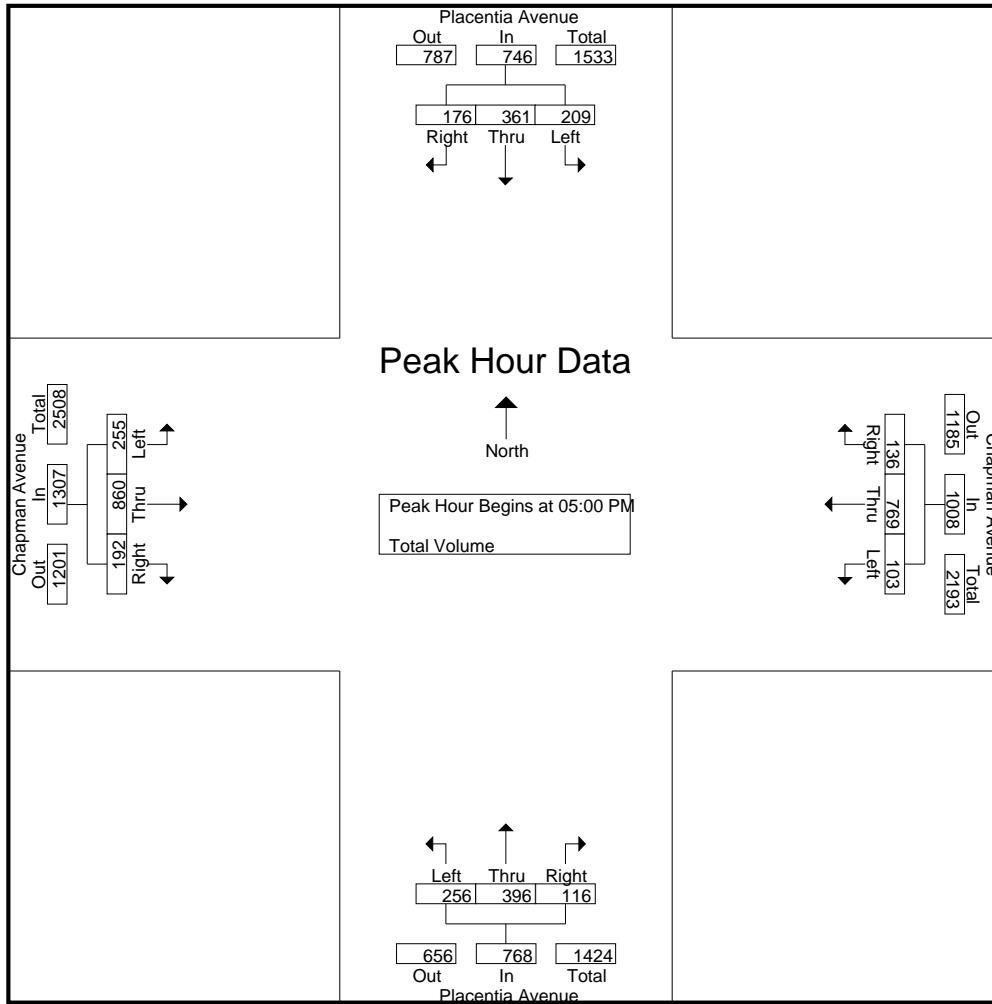
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Chapman Avenue Westbound				Placentia Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	60	88	55	203	20	156	37	213	53	101	22	176	62	208	49	319	911
04:15 PM	44	110	56	210	24	149	38	211	73	88	22	183	50	193	52	295	899
04:30 PM	43	72	54	169	15	161	28	204	72	96	25	193	61	189	45	295	861
04:45 PM	49	70	41	160	17	152	27	196	74	101	22	197	67	239	50	356	909
Total	196	340	206	742	76	618	130	824	272	386	91	749	240	829	196	1265	3580
05:00 PM	39	91	43	173	26	179	34	239	72	100	29	201	66	196	39	301	914
05:15 PM	46	80	45	171	26	207	37	270	80	126	20	226	56	222	43	321	988
05:30 PM	67	89	43	199	25	185	31	241	54	98	38	190	63	216	62	341	971
05:45 PM	57	101	45	203	26	198	34	258	50	72	29	151	70	226	48	344	956
Total	209	361	176	746	103	769	136	1008	256	396	116	768	255	860	192	1307	3829
Grand Total	405	701	382	1488	179	1387	266	1832	528	782	207	1517	495	1689	388	2572	7409
Apprch %	27.2	47.1	25.7		9.8	75.7	14.5		34.8	51.5	13.6		19.2	65.7	15.1		
Total %	5.5	9.5	5.2	20.1	2.4	18.7	3.6	24.7	7.1	10.6	2.8	20.5	6.7	22.8	5.2	34.7	

Start Time	Placentia Avenue Southbound				Chapman Avenue Westbound				Placentia Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	39	91	43	173	<b>26</b>	179	34	239	72	100	29	201	66	196	39	301	914
05:15 PM	46	80	<b>45</b>	171	26	<b>207</b>	<b>37</b>	<b>270</b>	<b>80</b>	<b>126</b>	20	<b>226</b>	56	222	43	321	<b>988</b>
05:30 PM	<b>67</b>	89	43	199	25	185	31	241	54	98	<b>38</b>	190	63	216	<b>62</b>	341	971
05:45 PM	57	<b>101</b>	45	<b>203</b>	26	198	34	258	50	72	29	151	<b>70</b>	<b>226</b>	48	<b>344</b>	956
Total Volume	209	361	176	746	103	769	136	1008	256	396	116	768	255	860	192	1307	3829
% App. Total	28	48.4	23.6		10.2	76.3	13.5		33.3	51.6	15.1		19.5	65.8	14.7		
PHF	.780	.894	.978	.919	.990	.929	.919	.933	.800	.786	.763	.850	.911	.951	.774	.950	.969

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Champan Avenue  
 Weather: Clear

File Name : 23PLAPLCHPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:30 PM				04:45 PM			
+0 mins.	39	91	43	173	<b>26</b>	179	34	239	72	96	25	193	<b>67</b>	<b>239</b>	50	<b>356</b>
+15 mins.	46	80	<b>45</b>	171	26	<b>207</b>	<b>37</b>	<b>270</b>	74	101	22	197	66	196	39	301
+30 mins.	<b>67</b>	89	43	199	25	185	31	241	72	100	<b>29</b>	201	56	222	43	321
+45 mins.	57	<b>101</b>	45	<b>203</b>	26	198	34	258	<b>80</b>	<b>126</b>	20	<b>226</b>	63	216	<b>62</b>	341
Total Volume	209	361	176	746	103	769	136	1008	298	423	96	817	252	873	194	1319
% App. Total	28	48.4	23.6		10.2	76.3	13.5		36.5	51.8	11.8		19.1	66.2	14.7	
PHF	.780	.894	.978	.919	.990	.929	.919	.933	.931	.839	.828	.904	.940	.913	.782	.926

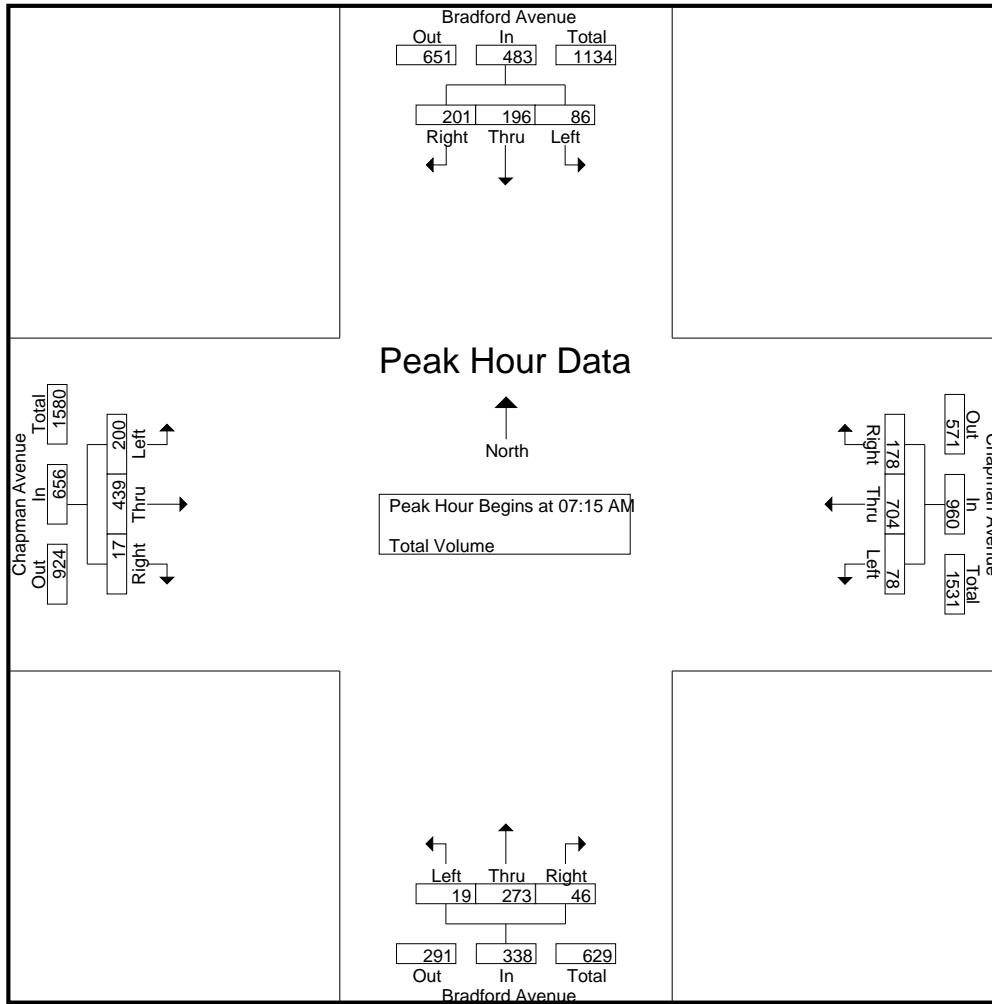
City of Placentia  
 N/S: Bradford Avenue  
 E/W: Chapman Avenue  
 Weather: Clear

File Name : 24PLABRCHAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Bradford Avenue Southbound				Chapman Avenue Westbound				Bradford Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	14	19	36	69	8	111	12	131	4	27	9	40	26	68	2	96	336
07:15 AM	12	34	39	85	11	156	31	198	8	59	12	79	49	95	4	148	510
07:30 AM	18	62	51	131	11	170	64	245	3	109	19	131	74	100	2	176	683
07:45 AM	33	66	69	168	42	220	57	319	2	88	9	99	44	119	7	170	756
Total	77	181	195	453	72	657	164	893	17	283	49	349	193	382	15	590	2285
08:00 AM	23	34	42	99	14	158	26	198	6	17	6	29	33	125	4	162	488
08:15 AM	14	17	28	59	11	164	21	196	8	9	10	27	22	126	5	153	435
08:30 AM	13	10	22	45	9	149	21	179	6	18	13	37	36	108	9	153	414
08:45 AM	11	18	25	54	15	166	17	198	7	11	10	28	21	110	7	138	418
Total	61	79	117	257	49	637	85	771	27	55	39	121	112	469	25	606	1755
Grand Total	138	260	312	710	121	1294	249	1664	44	338	88	470	305	851	40	1196	4040
Apprch %	19.4	36.6	43.9		7.3	77.8	15		9.4	71.9	18.7		25.5	71.2	3.3		
Total %	3.4	6.4	7.7	17.6	3	32	6.2	41.2	1.1	8.4	2.2	11.6	7.5	21.1	1	29.6	

Start Time	Bradford Avenue Southbound				Chapman Avenue Westbound				Bradford Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	12	34	39	85	11	156	31	198	8	59	12	79	49	95	4	148	510
07:30 AM	18	62	51	131	11	170	64	245	3	109	19	131	74	100	2	176	683
07:45 AM	33	66	69	168	42	220	57	319	2	88	9	99	44	119	7	170	756
08:00 AM	23	34	42	99	14	158	26	198	6	17	6	29	33	125	4	162	488
Total Volume	86	196	201	483	78	704	178	960	19	273	46	338	200	439	17	656	2437
% App. Total	17.8	40.6	41.6		8.1	73.3	18.5		5.6	80.8	13.6		30.5	66.9	2.6		
PHF	.652	.742	.728	.719	.464	.800	.695	.752	.594	.626	.605	.645	.676	.878	.607	.932	.806



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:00 AM				07:30 AM			
+0 mins.	12	34	39	85	11	156	31	198	4	27	9	40	74	100	2	176
+15 mins.	18	62	51	131	11	170	64	245	8	59	12	79	44	119	7	170
+30 mins.	33	66	69	168	42	220	57	319	3	109	19	131	33	125	4	162
+45 mins.	23	34	42	99	14	158	26	198	2	88	9	99	22	126	5	153
Total Volume	86	196	201	483	78	704	178	960	17	283	49	349	173	470	18	661
% App. Total	17.8	40.6	41.6		8.1	73.3	18.5		4.9	81.1	14		26.2	71.1	2.7	
PHF	.652	.742	.728	.719	.464	.800	.695	.752	.531	.649	.645	.666	.584	.933	.643	.939

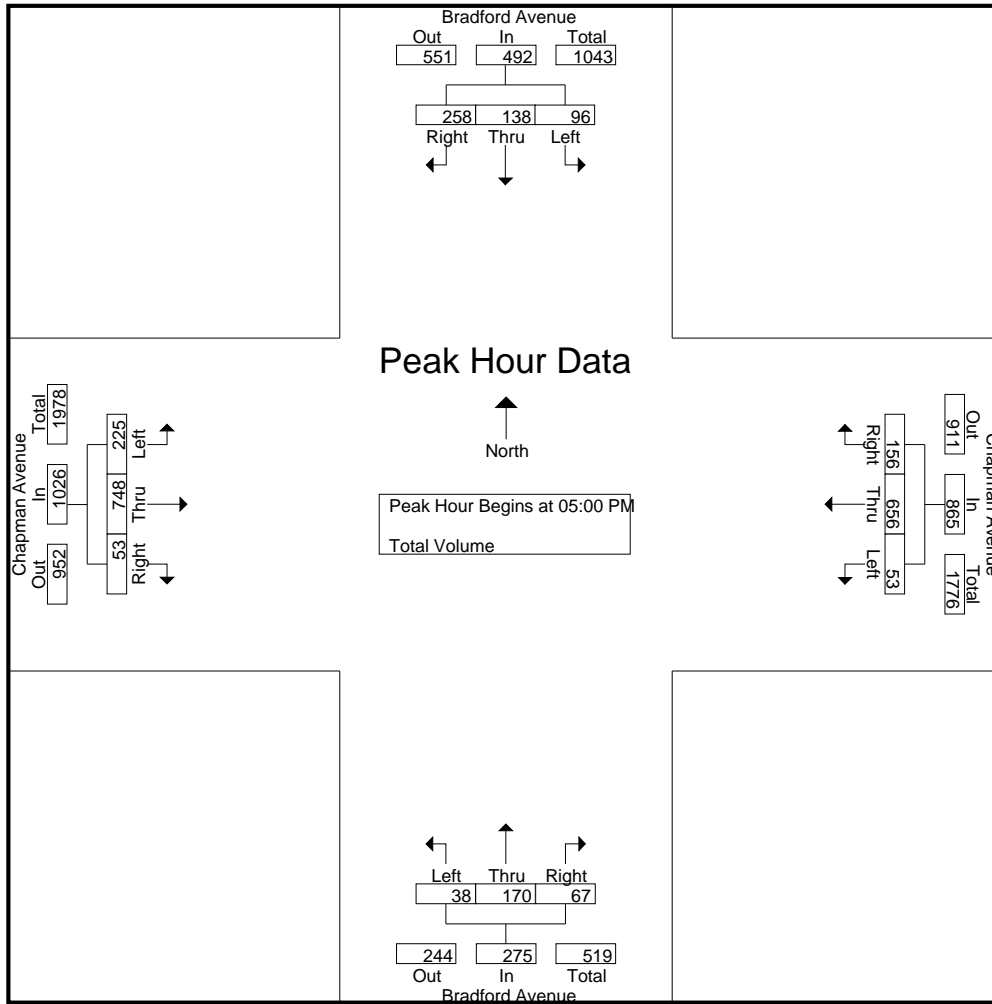
City of Placentia  
 N/S: Bradford Avenue  
 E/W: Chapman Avenue  
 Weather: Clear

File Name : 24PLABRCHPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Bradford Avenue Southbound				Chapman Avenue Westbound				Bradford Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	24	29	43	96	11	143	32	186	2	33	11	46	55	169	14	238	566
04:15 PM	20	33	33	86	13	134	27	174	11	47	17	75	50	163	11	224	559
04:30 PM	18	33	46	97	10	134	16	160	11	33	9	53	51	156	10	217	527
04:45 PM	26	33	50	109	14	113	32	159	11	43	11	65	44	189	11	244	577
Total	88	128	172	388	48	524	107	679	35	156	48	239	200	677	46	923	2229
05:00 PM	33	28	51	112	16	158	26	200	4	36	21	61	65	152	9	226	599
05:15 PM	18	45	71	134	7	175	42	224	11	50	10	71	46	192	17	255	684
05:30 PM	23	42	82	147	13	164	40	217	10	49	18	77	56	180	12	248	689
05:45 PM	22	23	54	99	17	159	48	224	13	35	18	66	58	224	15	297	686
Total	96	138	258	492	53	656	156	865	38	170	67	275	225	748	53	1026	2658
Grand Total	184	266	430	880	101	1180	263	1544	73	326	115	514	425	1425	99	1949	4887
Apprch %	20.9	30.2	48.9		6.5	76.4	17		14.2	63.4	22.4		21.8	73.1	5.1		
Total %	3.8	5.4	8.8	18	2.1	24.1	5.4	31.6	1.5	6.7	2.4	10.5	8.7	29.2	2	39.9	

Start Time	Bradford Avenue Southbound				Chapman Avenue Westbound				Bradford Avenue Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	<b>33</b>	28	51	112	16	158	26	200	4	36	<b>21</b>	61	<b>65</b>	152	9	226	599
05:15 PM	18	<b>45</b>	71	134	7	<b>175</b>	42	<b>224</b>	11	<b>50</b>	10	71	46	192	<b>17</b>	255	684
05:30 PM	23	42	<b>82</b>	<b>147</b>	13	164	40	217	10	49	18	<b>77</b>	56	180	12	248	<b>689</b>
05:45 PM	22	23	54	99	<b>17</b>	159	<b>48</b>	224	<b>13</b>	35	18	66	58	<b>224</b>	15	<b>297</b>	686
Total Volume	96	138	258	492	53	656	156	865	38	170	67	275	225	748	53	1026	2658
% App. Total	19.5	28	52.4		6.1	75.8	18		13.8	61.8	24.4		21.9	72.9	5.2		
PHF	.727	.767	.787	.837	.779	.937	.813	.965	.731	.850	.798	.893	.865	.835	.779	.864	.964



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	26	33	50	109	16	158	26	200	4	36	21	61	65	152	9	226
+15 mins.	33	28	51	112	7	175	42	224	11	50	10	71	46	192	17	255
+30 mins.	18	45	71	134	13	164	40	217	10	49	18	77	56	180	12	248
+45 mins.	23	42	82	147	17	159	48	224	13	35	18	66	58	224	15	297
Total Volume	100	148	254	502	53	656	156	865	38	170	67	275	225	748	53	1026
% App. Total	19.9	29.5	50.6		6.1	75.8	18		13.8	61.8	24.4		21.9	72.9	5.2	
PHF	.758	.822	.774	.854	.779	.937	.813	.965	.731	.850	.798	.893	.865	.835	.779	.864

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Chapman Avenue  
 Weather: Clear

File Name : 25PLAKRCHAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Chapman Avenue Westbound				Kraemer Boulevard Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	5	220	31	256	15	54	8	77	27	39	4	70	20	32	52	104	507
07:15 AM	16	242	49	307	24	87	13	124	41	67	7	115	30	54	55	139	685
07:30 AM	14	223	47	284	18	167	20	205	81	116	11	208	58	71	70	199	896
07:45 AM	15	310	65	390	41	114	10	165	52	86	24	162	37	99	75	211	928
Total	50	995	192	1237	98	422	51	571	201	308	46	555	145	256	252	653	3016
08:00 AM	12	225	36	273	49	100	18	167	37	69	56	162	34	77	67	178	780
08:15 AM	7	204	30	241	66	123	16	205	35	79	29	143	20	64	55	139	728
08:30 AM	9	225	31	265	18	79	11	108	37	79	8	124	26	48	41	115	612
08:45 AM	6	177	45	228	16	70	7	93	22	86	7	115	21	56	43	120	556
Total	34	831	142	1007	149	372	52	573	131	313	100	544	101	245	206	552	2676
Grand Total	84	1826	334	2244	247	794	103	1144	332	621	146	1099	246	501	458	1205	5692
Apprch %	3.7	81.4	14.9		21.6	69.4	9		30.2	56.5	13.3		20.4	41.6	38		
Total %	1.5	32.1	5.9	39.4	4.3	13.9	1.8	20.1	5.8	10.9	2.6	19.3	4.3	8.8	8	21.2	

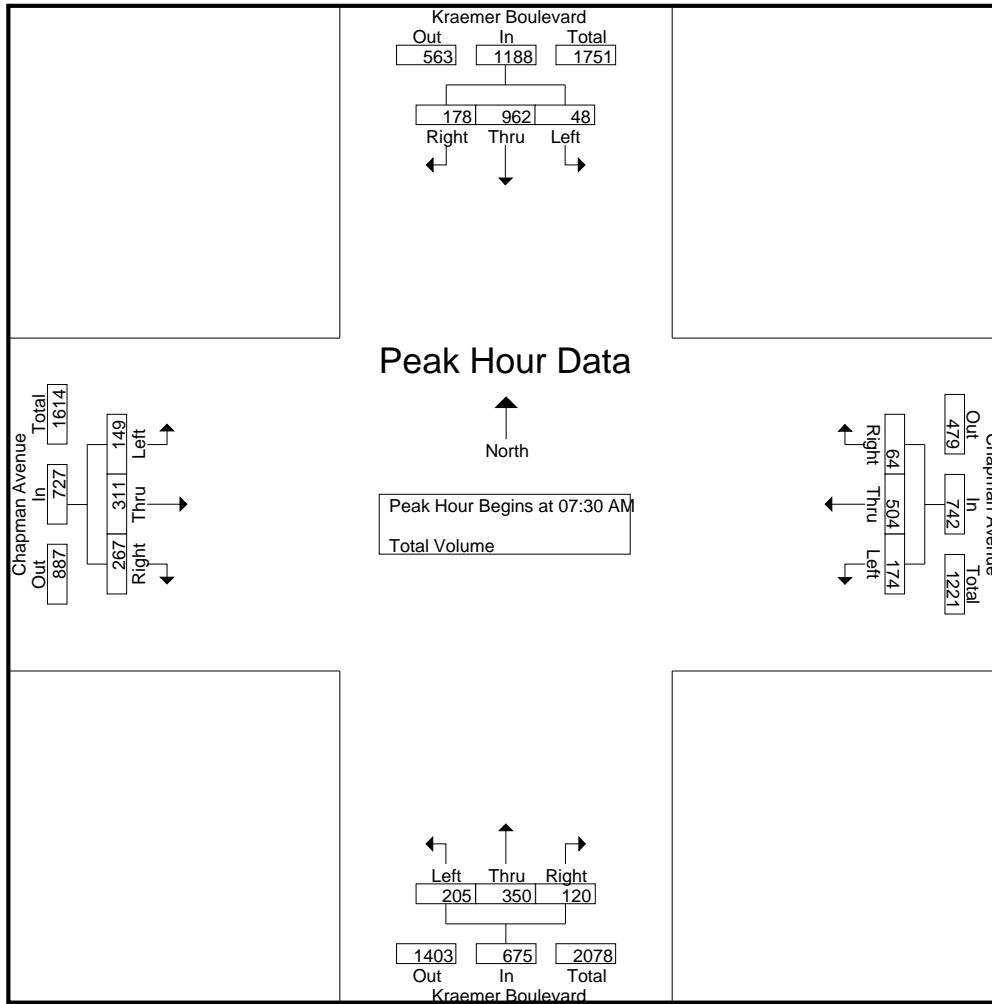
Start Time	Kraemer Boulevard Southbound				Chapman Avenue Westbound				Kraemer Boulevard Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	14	223	47	284	18	167	20	205	81	116	11	208	58	71	70	199	896
07:45 AM	15	310	65	390	41	114	10	165	52	86	24	162	37	99	75	211	928
08:00 AM	12	225	36	273	49	100	18	167	37	69	56	162	34	77	67	178	780
08:15 AM	7	204	30	241	66	123	16	205	35	79	29	143	20	64	55	139	728
Total Volume	48	962	178	1188	174	504	64	742	205	350	120	675	149	311	267	727	3332
% App. Total	4	81	15		23.5	67.9	8.6		30.4	51.9	17.8		20.5	42.8	36.7		
PHF	.800	.776	.685	.762	.659	.754	.800	.905	.633	.754	.536	.811	.642	.785	.890	.861	.898

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Chapman Avenue  
 Weather: Clear

File Name : 25PLAKRCHAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	16	242	49	307	18	167	20	205	81	116	11	208	30	54	55	139
+15 mins.	14	223	47	284	41	114	10	165	52	86	24	162	58	71	70	199
+30 mins.	15	310	65	390	49	100	18	167	37	69	56	162	37	99	75	211
+45 mins.	12	225	36	273	66	123	16	205	35	79	29	143	34	77	67	178
Total Volume	57	1000	197	1254	174	504	64	742	205	350	120	675	159	301	267	727
% App. Total	4.5	79.7	15.7		23.5	67.9	8.6		30.4	51.9	17.8		21.9	41.4	36.7	
PHF	.891	.806	.758	.804	.659	.754	.800	.905	.633	.754	.536	.811	.685	.760	.890	.861



City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Chapman Avenue  
 Weather: Clear

File Name : 25PLAKRCHPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Chapman Avenue Westbound				Kraemer Boulevard Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	13	131	46	190	13	67	13	93	44	194	19	257	32	91	48	171	711
04:15 PM	18	149	34	201	7	72	12	91	44	190	28	262	39	78	41	158	712
04:30 PM	19	126	39	184	18	60	11	89	55	183	23	261	35	88	29	152	686
04:45 PM	8	128	41	177	19	53	18	90	47	192	24	263	50	94	40	184	714
Total	58	534	160	752	57	252	54	363	190	759	94	1043	156	351	158	665	2823
05:00 PM	16	124	39	179	18	94	11	123	65	242	29	336	43	93	38	174	812
05:15 PM	20	134	44	198	11	107	15	133	72	245	34	351	46	88	41	175	857
05:30 PM	12	129	37	178	14	81	14	109	51	204	31	286	46	103	36	185	758
05:45 PM	28	101	46	175	19	74	17	110	87	177	38	302	46	132	44	222	809
Total	76	488	166	730	62	356	57	475	275	868	132	1275	181	416	159	756	3236
Grand Total	134	1022	326	1482	119	608	111	838	465	1627	226	2318	337	767	317	1421	6059
Apprch %	9	69	22		14.2	72.6	13.2		20.1	70.2	9.7		23.7	54	22.3		
Total %	2.2	16.9	5.4	24.5	2	10	1.8	13.8	7.7	26.9	3.7	38.3	5.6	12.7	5.2	23.5	

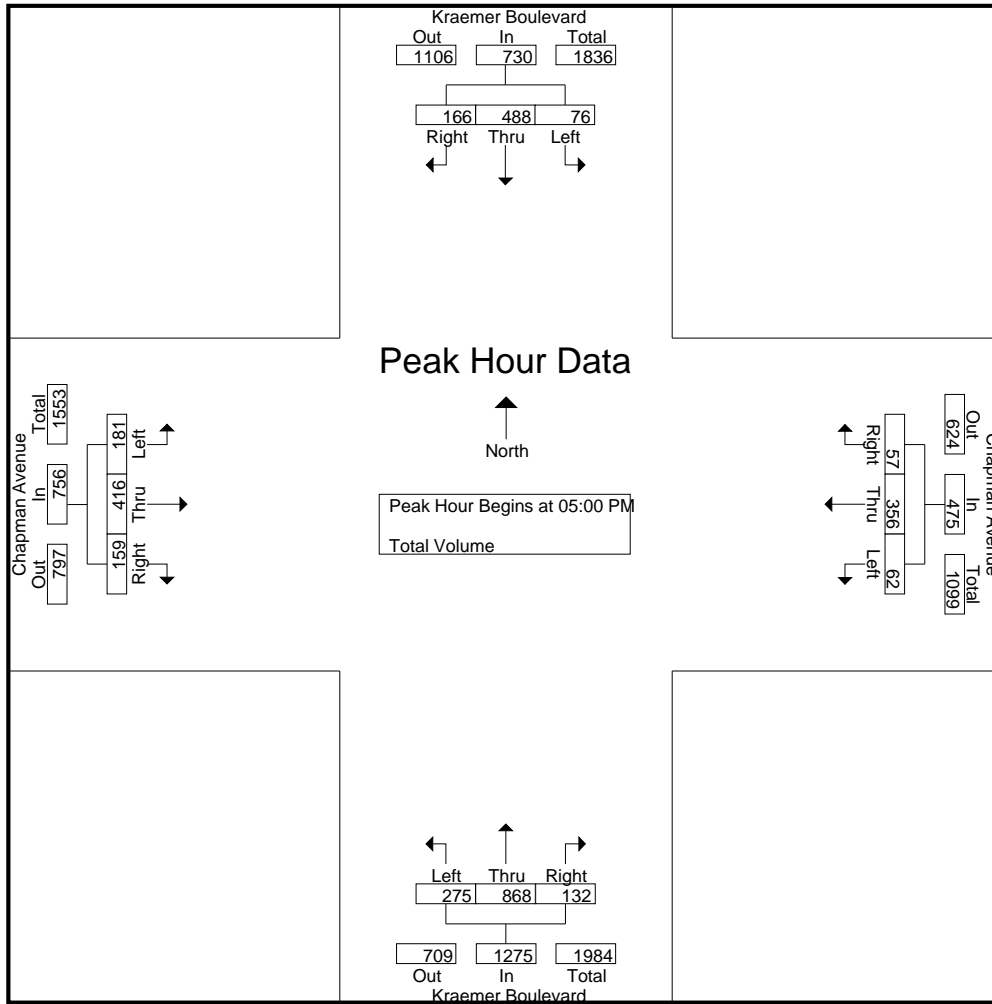
Start Time	Kraemer Boulevard Southbound				Chapman Avenue Westbound				Kraemer Boulevard Northbound				Chapman Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:00 PM	16	124	39	179	18	94	11	123	65	242	29	336	43	93	38	174	812
05:15 PM	20	<b>134</b>	44	<b>198</b>	11	<b>107</b>	15	<b>133</b>	72	<b>245</b>	34	<b>351</b>	<b>46</b>	88	41	175	<b>857</b>
05:30 PM	12	129	37	178	14	81	14	109	51	204	31	286	46	103	36	185	758
05:45 PM	<b>28</b>	101	<b>46</b>	175	<b>19</b>	74	<b>17</b>	110	<b>87</b>	177	<b>38</b>	302	46	<b>132</b>	<b>44</b>	<b>222</b>	809
Total Volume	76	488	166	730	62	356	57	475	275	868	132	1275	181	416	159	756	3236
% App. Total	10.4	66.8	22.7		13.1	74.9	12		21.6	68.1	10.4		23.9	55	21		
PHF	.679	.910	.902	.922	.816	.832	.838	.893	.790	.886	.868	.908	.984	.788	.903	.851	.944

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Chapman Avenue  
 Weather: Clear

File Name : 25PLAKRCHPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	13	131	<b>46</b>	190	18	94	11	123	65	242	29	336	43	93	38	174
+15 mins.	18	<b>149</b>	34	<b>201</b>	11	<b>107</b>	15	<b>133</b>	72	<b>245</b>	34	<b>351</b>	<b>46</b>	88	41	175
+30 mins.	<b>19</b>	126	39	184	14	81	14	109	51	204	31	286	46	103	36	185
+45 mins.	8	128	41	177	<b>19</b>	74	<b>17</b>	110	<b>87</b>	177	<b>38</b>	302	46	<b>132</b>	<b>44</b>	<b>222</b>
Total Volume	58	534	160	752	62	356	57	475	275	868	132	1275	181	416	159	756
% App. Total	7.7	71	21.3		13.1	74.9	12		21.6	68.1	10.4		23.9	55	21	
PHF	.763	.896	.870	.935	.816	.832	.838	.893	.790	.886	.868	.908	.984	.788	.903	.851

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Fullerton Crossings/Crowther Avenue  
 Weather: Clear

File Name : 26PLAPLCRAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

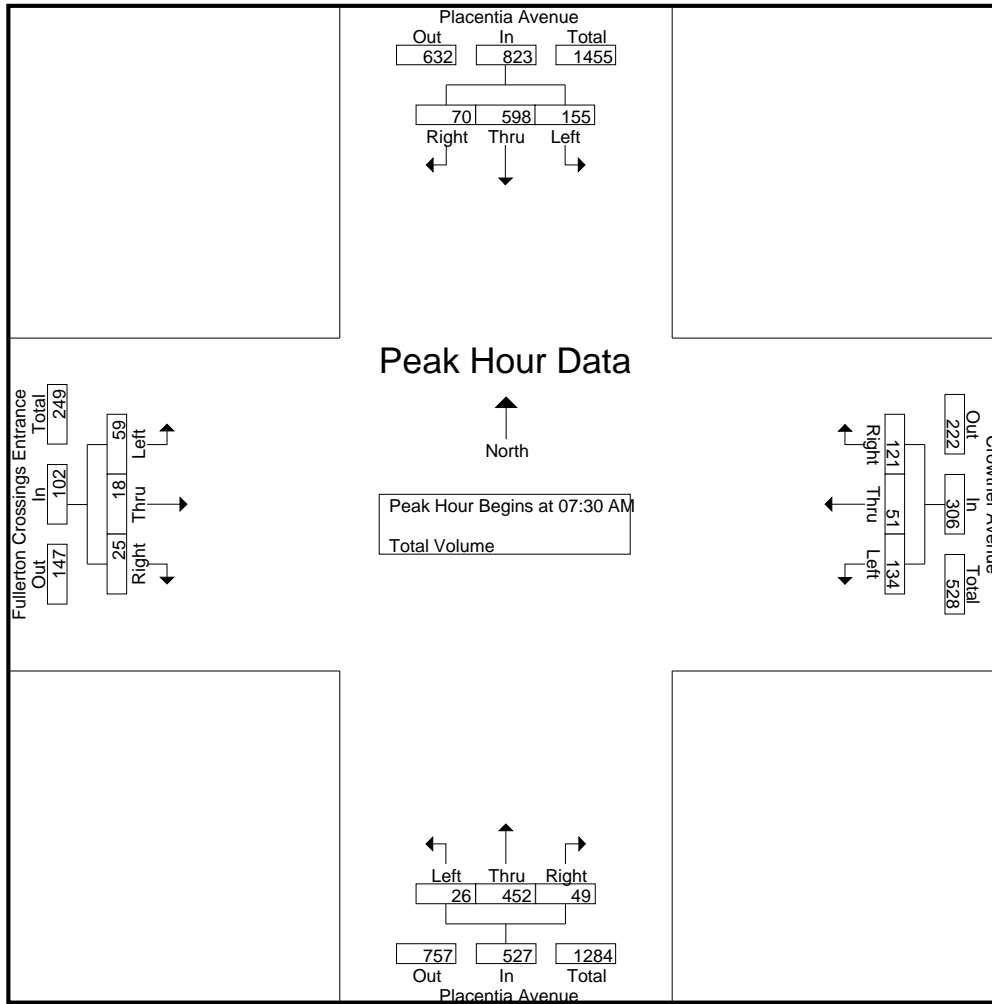
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Crowther Avenue Westbound				Placentia Avenue Northbound				Fullerton Crossings Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	34	112	24	170	15	8	13	36	6	54	12	72	9	4	5	18	296
07:15 AM	48	131	19	198	27	12	10	49	4	72	7	83	16	4	13	33	363
07:30 AM	36	140	13	189	33	8	22	63	6	136	9	151	12	3	8	23	426
07:45 AM	47	191	17	255	44	16	47	107	3	127	18	148	7	1	4	12	522
<b>Total</b>	<b>165</b>	<b>574</b>	<b>73</b>	<b>812</b>	<b>119</b>	<b>44</b>	<b>92</b>	<b>255</b>	<b>19</b>	<b>389</b>	<b>46</b>	<b>454</b>	<b>44</b>	<b>12</b>	<b>30</b>	<b>86</b>	<b>1607</b>
08:00 AM	40	145	15	200	36	14	33	83	7	106	13	126	17	6	8	31	440
08:15 AM	32	122	25	179	21	13	19	53	10	83	9	102	23	8	5	36	370
08:30 AM	18	152	21	191	24	12	15	51	14	66	19	99	15	15	14	44	385
08:45 AM	23	121	14	158	16	10	13	39	7	62	22	91	15	11	16	42	330
<b>Total</b>	<b>113</b>	<b>540</b>	<b>75</b>	<b>728</b>	<b>97</b>	<b>49</b>	<b>80</b>	<b>226</b>	<b>38</b>	<b>317</b>	<b>63</b>	<b>418</b>	<b>70</b>	<b>40</b>	<b>43</b>	<b>153</b>	<b>1525</b>
<b>Grand Total</b>	<b>278</b>	<b>1114</b>	<b>148</b>	<b>1540</b>	<b>216</b>	<b>93</b>	<b>172</b>	<b>481</b>	<b>57</b>	<b>706</b>	<b>109</b>	<b>872</b>	<b>114</b>	<b>52</b>	<b>73</b>	<b>239</b>	<b>3132</b>
Apprch %	18.1	72.3	9.6		44.9	19.3	35.8		6.5	81	12.5		47.7	21.8	30.5		
Total %	8.9	35.6	4.7	49.2	6.9	3	5.5	15.4	1.8	22.5	3.5	27.8	3.6	1.7	2.3	7.6	

Start Time	Placentia Avenue Southbound				Crowther Avenue Westbound				Placentia Avenue Northbound				Fullerton Crossings Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	36	140	13	189	33	8	22	63	6	<b>136</b>	9	<b>151</b>	12	3	<b>8</b>	23	426
07:45 AM	<b>47</b>	<b>191</b>	17	<b>255</b>	<b>44</b>	<b>16</b>	<b>47</b>	<b>107</b>	3	127	<b>18</b>	148	7	1	4	12	<b>522</b>
08:00 AM	40	145	15	200	36	14	33	83	7	106	13	126	17	6	8	31	440
08:15 AM	32	122	<b>25</b>	179	21	13	19	53	<b>10</b>	83	9	102	<b>23</b>	<b>8</b>	5	<b>36</b>	370
Total Volume	155	598	70	823	134	51	121	306	26	452	49	527	59	18	25	102	1758
% App. Total	18.8	72.7	8.5		43.8	16.7	39.5		4.9	85.8	9.3		57.8	17.6	24.5		
PHF	.824	.783	.700	.807	.761	.797	.644	.715	.650	.831	.681	.873	.641	.563	.781	.708	.842

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Fullerton Crossings/Crowther Avenue  
 Weather: Clear

File Name : 26PLAPLCRAM  
 Site Code : 22117718  
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 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				08:00 AM			
+0 mins.	<b>48</b>	131	<b>19</b>	198	33	8	22	63	6	<b>136</b>	9	<b>151</b>	17	6	8	31
+15 mins.	36	140	13	189	<b>44</b>	<b>16</b>	<b>47</b>	<b>107</b>	3	127	<b>18</b>	148	<b>23</b>	8	5	36
+30 mins.	47	<b>191</b>	17	<b>255</b>	36	14	33	83	7	106	13	126	15	<b>15</b>	14	<b>44</b>
+45 mins.	40	145	15	200	21	13	19	53	<b>10</b>	83	9	102	15	11	<b>16</b>	42
Total Volume	171	607	64	842	134	51	121	306	26	452	49	527	70	40	43	153
% App. Total	20.3	72.1	7.6		43.8	16.7	39.5		4.9	85.8	9.3		45.8	26.1	28.1	
PHF	.891	.795	.842	.825	.761	.797	.644	.715	.650	.831	.681	.873	.761	.667	.672	.869

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Fullerton Crossings/Crowther Avenue  
 Weather: Clear

File Name : 26PLAPLCRPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

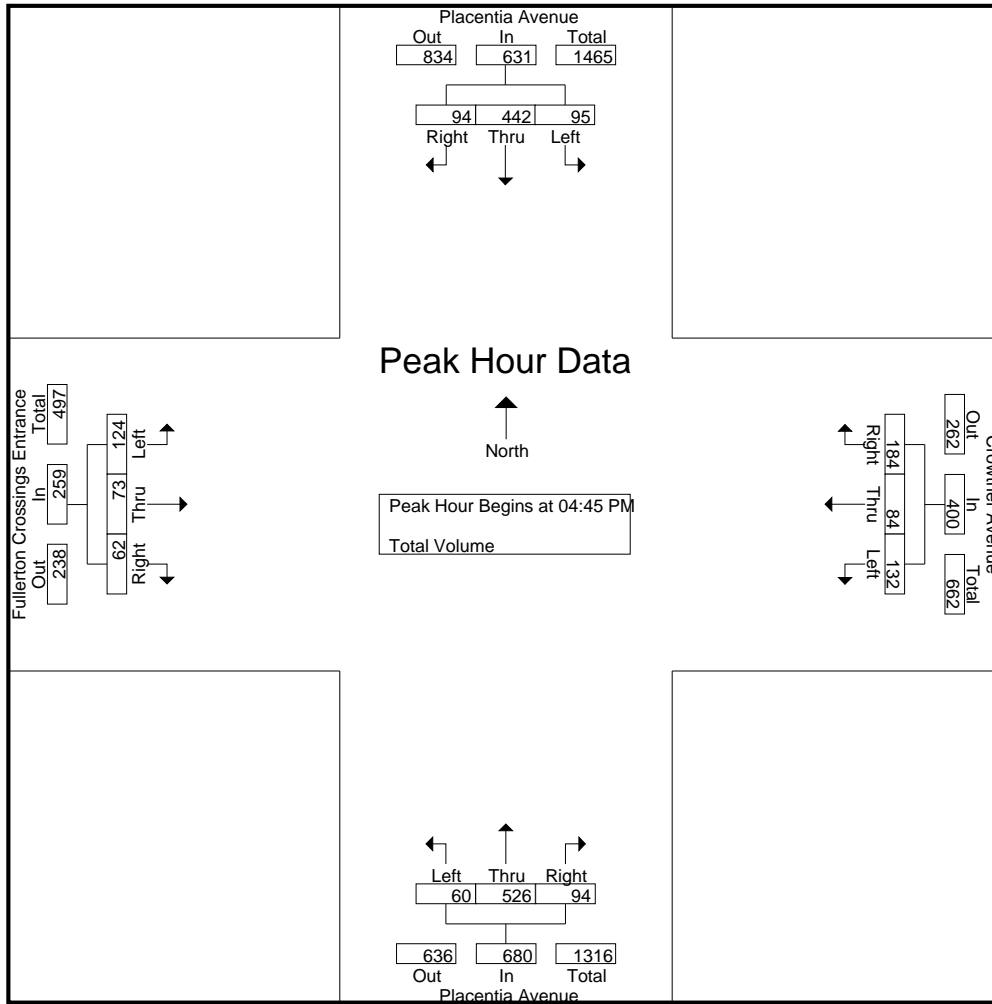
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Crowther Avenue Westbound				Placentia Avenue Northbound				Fullerton Crossings Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	24	106	27	157	27	13	44	84	13	115	27	155	29	17	14	60	456
04:15 PM	27	131	35	193	37	17	34	88	14	87	34	135	33	23	17	73	489
04:30 PM	24	73	26	123	31	11	45	87	11	127	29	167	18	14	24	56	433
04:45 PM	30	93	27	150	25	29	46	100	19	112	24	155	35	18	15	68	473
Total	105	403	115	623	120	70	169	359	57	441	114	612	115	72	70	257	1851
05:00 PM	22	114	25	161	45	25	51	121	14	145	29	188	30	21	9	60	530
05:15 PM	20	116	20	156	31	14	47	92	12	130	24	166	30	21	22	73	487
05:30 PM	23	119	22	164	31	16	40	87	15	139	17	171	29	13	16	58	480
05:45 PM	16	140	31	187	29	13	39	81	11	108	26	145	18	14	18	50	463
Total	81	489	98	668	136	68	177	381	52	522	96	670	107	69	65	241	1960
Grand Total	186	892	213	1291	256	138	346	740	109	963	210	1282	222	141	135	498	3811
Apprch %	14.4	69.1	16.5		34.6	18.6	46.8		8.5	75.1	16.4		44.6	28.3	27.1		
Total %	4.9	23.4	5.6	33.9	6.7	3.6	9.1	19.4	2.9	25.3	5.5	33.6	5.8	3.7	3.5	13.1	

Start Time	Placentia Avenue Southbound				Crowther Avenue Westbound				Placentia Avenue Northbound				Fullerton Crossings Entrance Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	<b>30</b>	93	<b>27</b>	150	25	29	46	100	<b>19</b>	112	24	155	<b>35</b>	18	15	68	473
05:00 PM	22	114	25	161	<b>45</b>	25	<b>51</b>	<b>121</b>	14	<b>145</b>	<b>29</b>	<b>188</b>	30	<b>21</b>	9	60	<b>530</b>
05:15 PM	20	116	20	156	31	14	47	92	12	130	24	166	30	21	<b>22</b>	<b>73</b>	487
05:30 PM	23	<b>119</b>	22	<b>164</b>	31	16	40	87	15	139	17	171	29	13	16	58	480
Total Volume	95	442	94	631	132	84	184	400	60	526	94	680	124	73	62	259	1970
% App. Total	15.1	70	14.9		33	21	46		8.8	77.4	13.8		47.9	28.2	23.9		
PHF	.792	.929	.870	.962	.733	.724	.902	.826	.789	.907	.810	.904	.886	.869	.705	.887	.929

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Fullerton Crossings/Crowther Avenue  
 Weather: Clear

File Name : 26PLAPLCRPM  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				04:30 PM				04:45 PM				04:45 PM			
+0 mins.	22	114	25	161	31	11	45	87	<b>19</b>	112	24	155	<b>35</b>	18	15	68
+15 mins.	20	116	20	156	25	<b>29</b>	46	100	14	<b>145</b>	<b>29</b>	<b>188</b>	30	<b>21</b>	9	60
+30 mins.	<b>23</b>	119	22	164	<b>45</b>	25	<b>51</b>	<b>121</b>	12	130	24	166	30	21	<b>22</b>	<b>73</b>
+45 mins.	16	<b>140</b>	<b>31</b>	<b>187</b>	31	14	47	92	15	139	17	171	29	13	16	58
Total Volume	81	489	98	668	132	79	189	400	60	526	94	680	124	73	62	259
% App. Total	12.1	73.2	14.7		33	19.8	47.2		8.8	77.4	13.8		47.9	28.2	23.9	
PHF	.880	.873	.790	.893	.733	.681	.926	.826	.789	.907	.810	.904	.886	.869	.705	.887

City of Placentia  
 N/S: Melrose Street  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 27PLAMECRAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

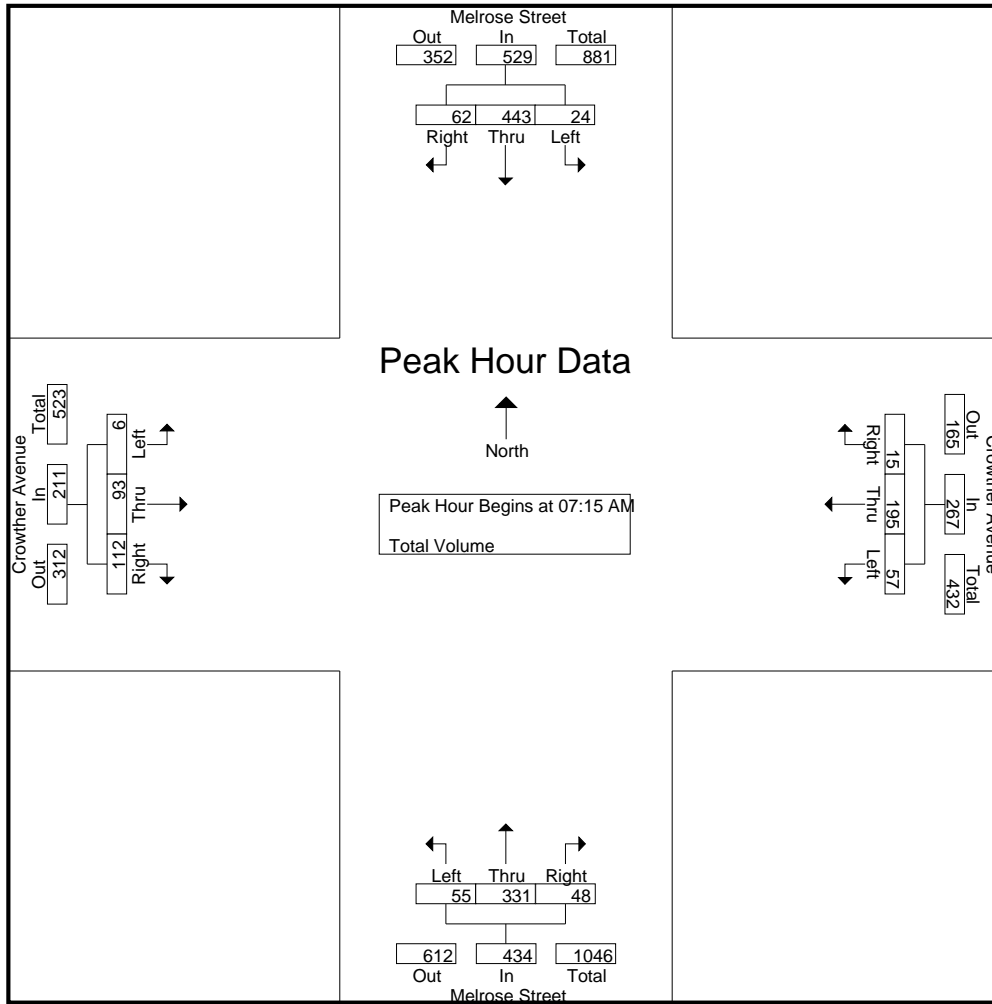
Groups Printed- Total Volume

Start Time	Melrose Street Southbound				Crowther Avenue Westbound				Melrose Street Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	59	7	69	10	21	1	32	14	36	14	64	2	10	22	34	199
07:15 AM	7	83	15	105	12	30	0	42	6	74	12	92	1	24	33	58	297
07:30 AM	7	124	13	144	10	38	6	54	15	139	7	161	2	21	23	46	405
07:45 AM	3	131	22	156	15	74	2	91	13	80	15	108	2	27	28	57	412
Total	20	397	57	474	47	163	9	219	48	329	48	425	7	82	106	195	1313
08:00 AM	7	105	12	124	20	53	7	80	21	38	14	73	1	21	28	50	327
08:15 AM	7	50	7	64	5	34	7	46	12	30	6	48	3	21	24	48	206
08:30 AM	5	44	11	60	11	30	2	43	10	35	11	56	2	25	17	44	203
08:45 AM	3	44	5	52	8	32	2	42	8	27	7	42	5	36	17	58	194
Total	22	243	35	300	44	149	18	211	51	130	38	219	11	103	86	200	930
Grand Total	42	640	92	774	91	312	27	430	99	459	86	644	18	185	192	395	2243
Apprch %	5.4	82.7	11.9		21.2	72.6	6.3		15.4	71.3	13.4		4.6	46.8	48.6		
Total %	1.9	28.5	4.1	34.5	4.1	13.9	1.2	19.2	4.4	20.5	3.8	28.7	0.8	8.2	8.6	17.6	

Start Time	Melrose Street Southbound				Crowther Avenue Westbound				Melrose Street Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	7	83	15	105	12	30	0	42	6	74	12	92	1	24	33	58	297
07:30 AM	7	124	13	144	10	38	6	54	15	139	7	161	2	21	23	46	405
07:45 AM	3	131	22	156	15	74	2	91	13	80	15	108	2	27	28	57	412
08:00 AM	7	105	12	124	20	53	7	80	21	38	14	73	1	21	28	50	327
Total Volume	24	443	62	529	57	195	15	267	55	331	48	434	6	93	112	211	1441
% App. Total	4.5	83.7	11.7		21.3	73	5.6		12.7	76.3	11.1		2.8	44.1	53.1		
PHF	.857	.845	.705	.848	.713	.659	.536	.734	.655	.595	.800	.674	.750	.861	.848	.909	.874

City of Placentia  
 N/S: Melrose Street  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 27PLAMECRAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:15 AM				07:15 AM			
+0 mins.	7	83	15	105	10	38	6	54	6	74	12	92	1	24	33	58
+15 mins.	7	124	13	144	15	74	2	91	15	139	7	161	2	21	23	46
+30 mins.	3	131	22	156	20	53	7	80	13	80	15	108	2	27	28	57
+45 mins.	7	105	12	124	5	34	7	46	21	38	14	73	1	21	28	50
Total Volume	24	443	62	529	50	199	22	271	55	331	48	434	6	93	112	211
% App. Total	4.5	83.7	11.7		18.5	73.4	8.1		12.7	76.3	11.1		2.8	44.1	53.1	
PHF	.857	.845	.705	.848	.625	.672	.786	.745	.655	.595	.800	.674	.750	.861	.848	.909



City of Placentia  
 N/S: Melrose Street  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 27PLAMECRPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

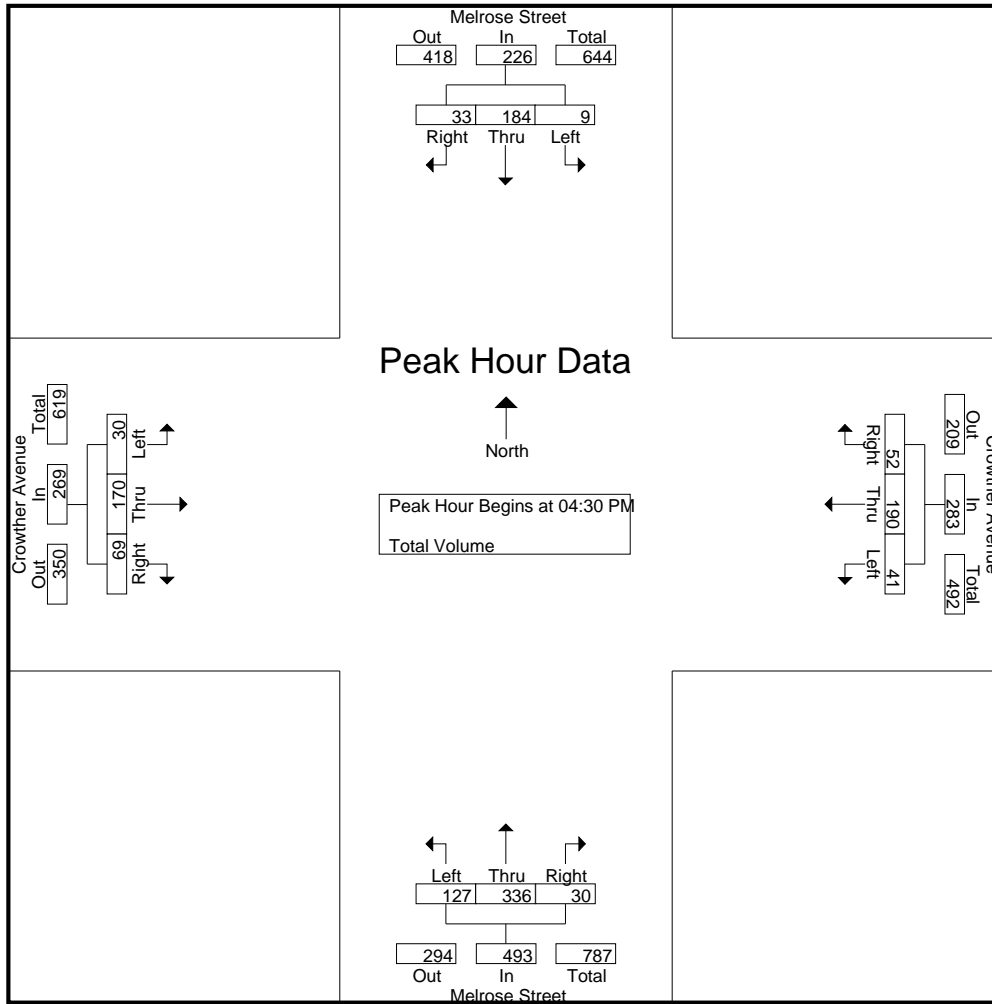
Groups Printed- Total Volume

Start Time	Melrose Street Southbound				Crowther Avenue Westbound				Melrose Street Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	2	51	7	60	13	48	6	67	5	68	16	89	8	46	23	77	293
04:15 PM	2	46	10	58	15	36	9	60	27	76	14	117	9	42	27	78	313
04:30 PM	5	35	9	49	22	43	19	84	24	77	4	105	7	39	21	67	305
04:45 PM	1	48	5	54	7	51	13	71	33	69	7	109	7	42	21	70	304
Total	10	180	31	221	57	178	47	282	89	290	41	420	31	169	92	292	1215
05:00 PM	1	46	8	55	9	58	9	76	41	94	10	145	10	47	14	71	347
05:15 PM	2	55	11	68	3	38	11	52	29	96	9	134	6	42	13	61	315
05:30 PM	1	62	8	71	8	52	14	74	26	67	2	95	9	35	14	58	298
05:45 PM	5	34	7	46	8	48	7	63	23	63	7	93	6	35	18	59	261
Total	9	197	34	240	28	196	41	265	119	320	28	467	31	159	59	249	1221
Grand Total	19	377	65	461	85	374	88	547	208	610	69	887	62	328	151	541	2436
Apprch %	4.1	81.8	14.1		15.5	68.4	16.1		23.4	68.8	7.8		11.5	60.6	27.9		
Total %	0.8	15.5	2.7	18.9	3.5	15.4	3.6	22.5	8.5	25	2.8	36.4	2.5	13.5	6.2	22.2	

Start Time	Melrose Street Southbound				Crowther Avenue Westbound				Melrose Street Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	5	35	9	49	22	43	19	84	24	77	4	105	7	39	21	67	305
04:45 PM	1	48	5	54	7	51	13	71	33	69	7	109	7	42	21	70	304
05:00 PM	1	46	8	55	9	58	9	76	41	94	10	145	10	47	14	71	347
05:15 PM	2	55	11	68	3	38	11	52	29	96	9	134	6	42	13	61	315
Total Volume	9	184	33	226	41	190	52	283	127	336	30	493	30	170	69	269	1271
% App. Total	4	81.4	14.6		14.5	67.1	18.4		25.8	68.2	6.1		11.2	63.2	25.7		
PHF	.450	.836	.750	.831	.466	.819	.684	.842	.774	.875	.750	.850	.750	.904	.821	.947	.916

City of Placentia  
 N/S: Melrose Street  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 27PLAMECRPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:15 PM				04:30 PM				04:00 PM			
+0 mins.	1	48	5	54	15	36	9	60	24	77	4	105	8	<b>46</b>	23	77
+15 mins.	1	46	8	55	<b>22</b>	43	<b>19</b>	<b>84</b>	33	69	7	109	<b>9</b>	42	<b>27</b>	<b>78</b>
+30 mins.	<b>2</b>	55	<b>11</b>	68	7	51	13	71	<b>41</b>	94	<b>10</b>	<b>145</b>	7	39	21	67
+45 mins.	1	<b>62</b>	8	<b>71</b>	9	<b>58</b>	9	76	29	<b>96</b>	9	134	7	42	21	70
Total Volume	5	211	32	248	53	188	50	291	127	336	30	493	31	169	92	292
% App. Total	2	85.1	12.9		18.2	64.6	17.2		25.8	68.2	6.1		10.6	57.9	31.5	
PHF	.625	.851	.727	.873	.602	.810	.658	.866	.774	.875	.750	.850	.861	.918	.852	.936

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 28PLAKRCRAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

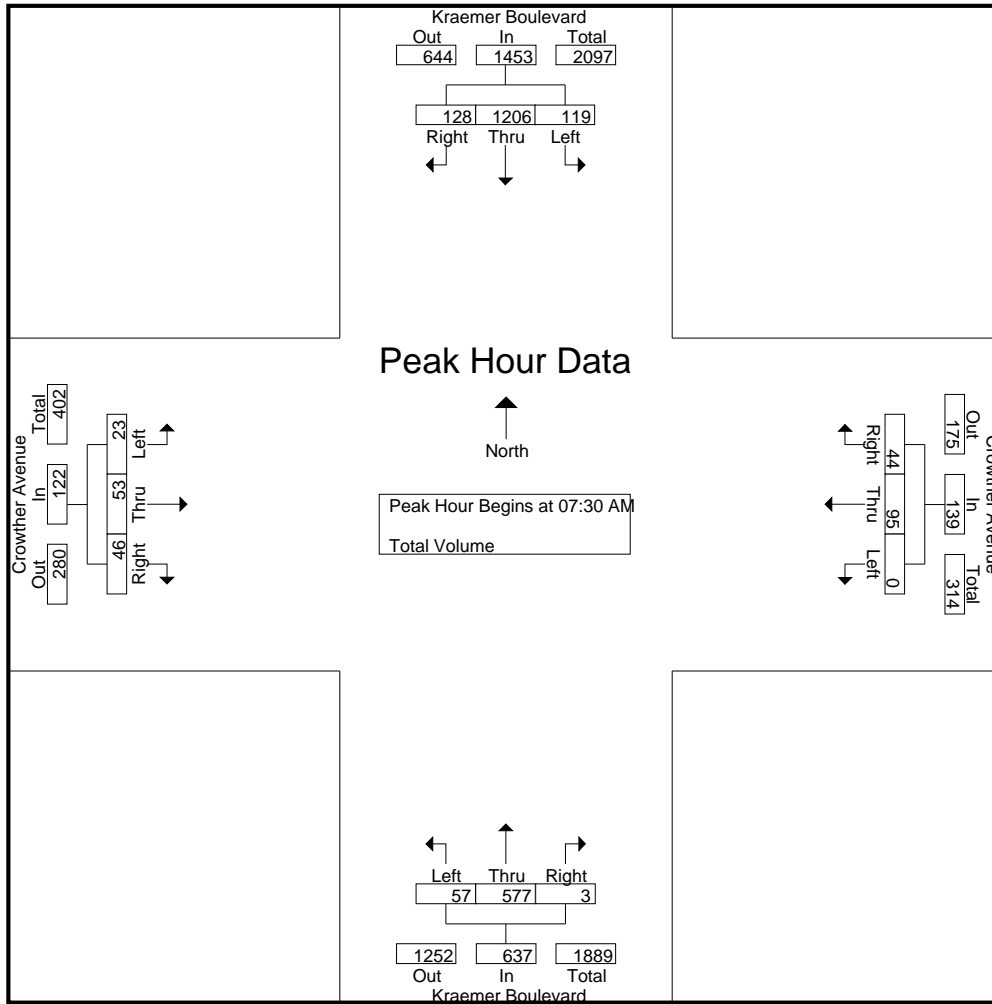
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Crowther Avenue Westbound				Kraemer Boulevard Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	15	270	18	303	0	9	4	13	4	55	0	59	6	5	5	16	391
07:15 AM	25	282	33	340	0	11	8	19	6	110	0	116	5	11	8	24	499
07:30 AM	23	266	22	311	0	21	20	41	14	167	1	182	7	17	9	33	567
07:45 AM	46	330	53	429	0	37	5	42	12	159	0	171	4	15	10	29	671
<b>Total</b>	<b>109</b>	<b>1148</b>	<b>126</b>	<b>1383</b>	<b>0</b>	<b>78</b>	<b>37</b>	<b>115</b>	<b>36</b>	<b>491</b>	<b>1</b>	<b>528</b>	<b>22</b>	<b>48</b>	<b>32</b>	<b>102</b>	<b>2128</b>
08:00 AM	22	336	32	390	0	18	10	28	21	131	2	154	6	10	12	28	600
08:15 AM	28	274	21	323	0	19	9	28	10	120	0	130	6	11	15	32	513
08:30 AM	17	226	23	266	0	17	11	28	3	119	2	124	6	16	8	30	448
08:45 AM	20	234	16	270	0	15	6	21	5	103	0	108	10	27	11	48	447
<b>Total</b>	<b>87</b>	<b>1070</b>	<b>92</b>	<b>1249</b>	<b>0</b>	<b>69</b>	<b>36</b>	<b>105</b>	<b>39</b>	<b>473</b>	<b>4</b>	<b>516</b>	<b>28</b>	<b>64</b>	<b>46</b>	<b>138</b>	<b>2008</b>
<b>Grand Total</b>	<b>196</b>	<b>2218</b>	<b>218</b>	<b>2632</b>	<b>0</b>	<b>147</b>	<b>73</b>	<b>220</b>	<b>75</b>	<b>964</b>	<b>5</b>	<b>1044</b>	<b>50</b>	<b>112</b>	<b>78</b>	<b>240</b>	<b>4136</b>
Apprch %	7.4	84.3	8.3		0	66.8	33.2		7.2	92.3	0.5		20.8	46.7	32.5		
Total %	4.7	53.6	5.3	63.6	0	3.6	1.8	5.3	1.8	23.3	0.1	25.2	1.2	2.7	1.9	5.8	

Start Time	Kraemer Boulevard Southbound				Crowther Avenue Westbound				Kraemer Boulevard Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	23	266	22	311	0	21	20	41	14	167	1	182	7	17	9	33	567
07:45 AM	46	330	53	429	0	37	5	42	12	159	0	171	4	15	10	29	671
08:00 AM	22	336	32	390	0	18	10	28	21	131	2	154	6	10	12	28	600
08:15 AM	28	274	21	323	0	19	9	28	10	120	0	130	6	11	15	32	513
<b>Total Volume</b>	<b>119</b>	<b>1206</b>	<b>128</b>	<b>1453</b>	<b>0</b>	<b>95</b>	<b>44</b>	<b>139</b>	<b>57</b>	<b>577</b>	<b>3</b>	<b>637</b>	<b>23</b>	<b>53</b>	<b>46</b>	<b>122</b>	<b>2351</b>
% App. Total	8.2	83	8.8		0	68.3	31.7		8.9	90.6	0.5		18.9	43.4	37.7		
PHF	.647	.897	.604	.847	.000	.642	.550	.827	.679	.864	.375	.875	.821	.779	.767	.924	.876

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 28PLAKRCRAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				08:00 AM			
+0 mins.	25	282	33	340	0	21	<b>20</b>	41	14	<b>167</b>	1	<b>182</b>	6	10	12	28
+15 mins.	23	266	22	311	0	<b>37</b>	5	<b>42</b>	12	159	0	171	6	11	<b>15</b>	32
+30 mins.	<b>46</b>	330	<b>53</b>	<b>429</b>	0	18	10	28	<b>21</b>	131	<b>2</b>	154	6	16	8	30
+45 mins.	22	<b>336</b>	32	390	0	19	9	28	10	120	0	130	<b>10</b>	<b>27</b>	11	<b>48</b>
Total Volume	116	1214	140	1470	0	95	44	139	57	577	3	637	28	64	46	138
% App. Total	7.9	82.6	9.5		0	68.3	31.7		8.9	90.6	0.5		20.3	46.4	33.3	
PHF	.630	.903	.660	.857	.000	.642	.550	.827	.679	.864	.375	.875	.700	.593	.767	.719

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 28PLAKRCRPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

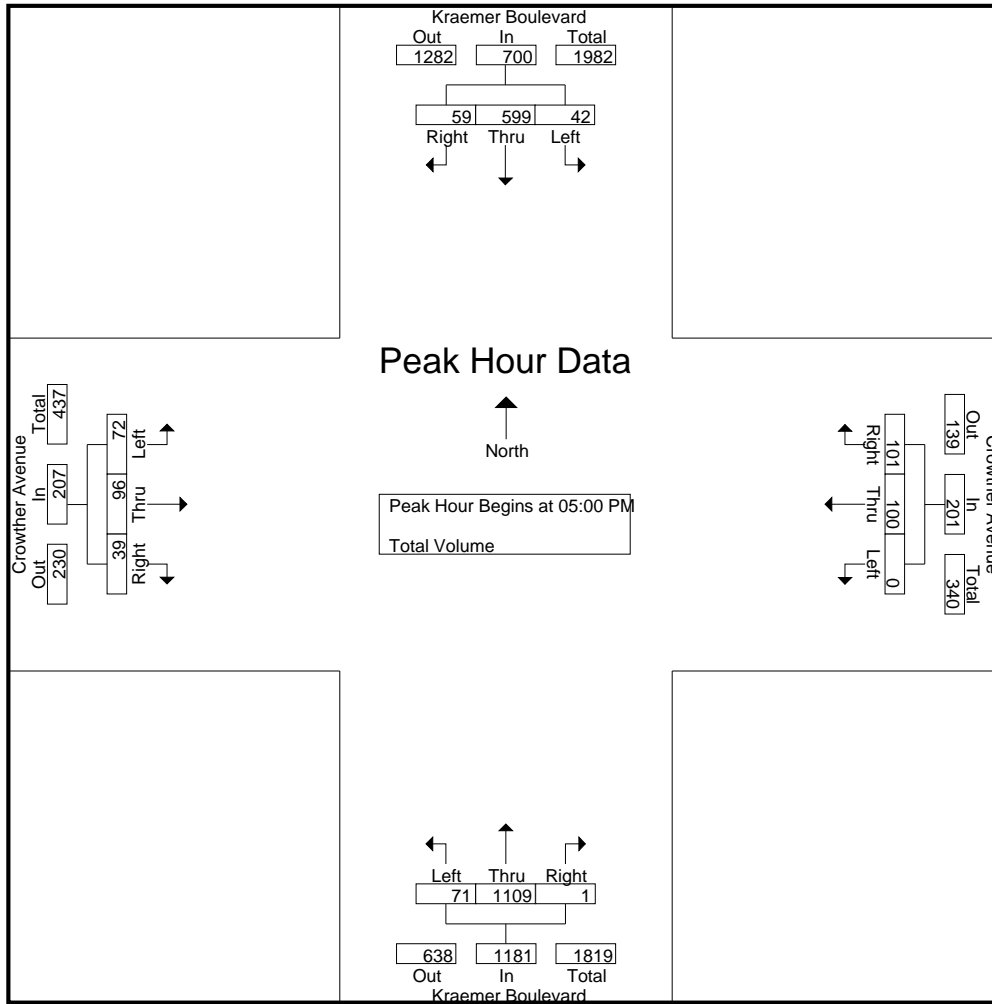
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Crowther Avenue Westbound				Kraemer Boulevard Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	9	174	18	201	0	21	15	36	5	218	0	223	26	28	10	64	524
04:15 PM	8	171	14	193	0	22	21	43	14	200	0	214	25	21	7	53	503
04:30 PM	8	170	10	188	0	24	23	47	13	253	1	267	20	26	13	59	561
04:45 PM	13	133	19	165	0	30	24	54	14	226	0	240	19	26	7	52	511
Total	38	648	61	747	0	97	83	180	46	897	1	944	90	101	37	228	2099
05:00 PM	10	173	12	195	0	27	25	52	17	284	0	301	20	26	13	59	607
05:15 PM	11	142	10	163	0	19	28	47	22	283	0	305	26	26	11	63	578
05:30 PM	13	151	17	181	0	22	24	46	17	279	1	297	11	22	6	39	563
05:45 PM	8	133	20	161	0	32	24	56	15	263	0	278	15	22	9	46	541
Total	42	599	59	700	0	100	101	201	71	1109	1	1181	72	96	39	207	2289
Grand Total	80	1247	120	1447	0	197	184	381	117	2006	2	2125	162	197	76	435	4388
Apprch %	5.5	86.2	8.3		0	51.7	48.3		5.5	94.4	0.1		37.2	45.3	17.5		
Total %	1.8	28.4	2.7	33	0	4.5	4.2	8.7	2.7	45.7	0	48.4	3.7	4.5	1.7	9.9	

Start Time	Kraemer Boulevard Southbound				Crowther Avenue Westbound				Kraemer Boulevard Northbound				Crowther Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	10	<b>173</b>	12	<b>195</b>	0	27	25	52	17	<b>284</b>	0	301	20	<b>26</b>	<b>13</b>	59	<b>607</b>
05:15 PM	11	142	10	163	0	19	<b>28</b>	47	<b>22</b>	283	0	<b>305</b>	<b>26</b>	26	11	<b>63</b>	578
05:30 PM	<b>13</b>	151	17	181	0	22	24	46	17	279	<b>1</b>	297	11	22	6	39	563
05:45 PM	8	133	<b>20</b>	161	0	<b>32</b>	24	<b>56</b>	15	263	0	278	15	22	9	46	541
Total Volume	42	599	59	700	0	100	101	201	71	1109	1	1181	72	96	39	207	2289
% App. Total	6	85.6	8.4		0	49.8	50.2		6	93.9	0.1		34.8	46.4	18.8		
PHF	.808	.866	.738	.897	.000	.781	.902	.897	.807	.976	.250	.968	.692	.923	.750	.821	.943

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Crowther Avenue  
 Weather: Clear

File Name : 28PLAKCRPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				05:00 PM				04:30 PM			
+0 mins.	9	<b>174</b>	18	<b>201</b>	0	27	25	52	17	<b>284</b>	0	301	20	<b>26</b>	<b>13</b>	59
+15 mins.	8	171	14	193	0	19	<b>28</b>	47	<b>22</b>	283	0	<b>305</b>	19	26	7	52
+30 mins.	8	170	10	188	0	22	24	46	17	279	<b>1</b>	297	20	26	13	59
+45 mins.	<b>13</b>	133	<b>19</b>	165	0	<b>32</b>	24	<b>56</b>	15	263	0	278	<b>26</b>	26	11	<b>63</b>
Total Volume	38	648	61	747	0	100	101	201	71	1109	1	1181	85	104	44	233
% App. Total	5.1	86.7	8.2		0	49.8	50.2		6	93.9	0.1		36.5	44.6	18.9	
PHF	.731	.931	.803	.929	.000	.781	.902	.897	.807	.976	.250	.968	.817	1.000	.846	.925

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 29PLAPLORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

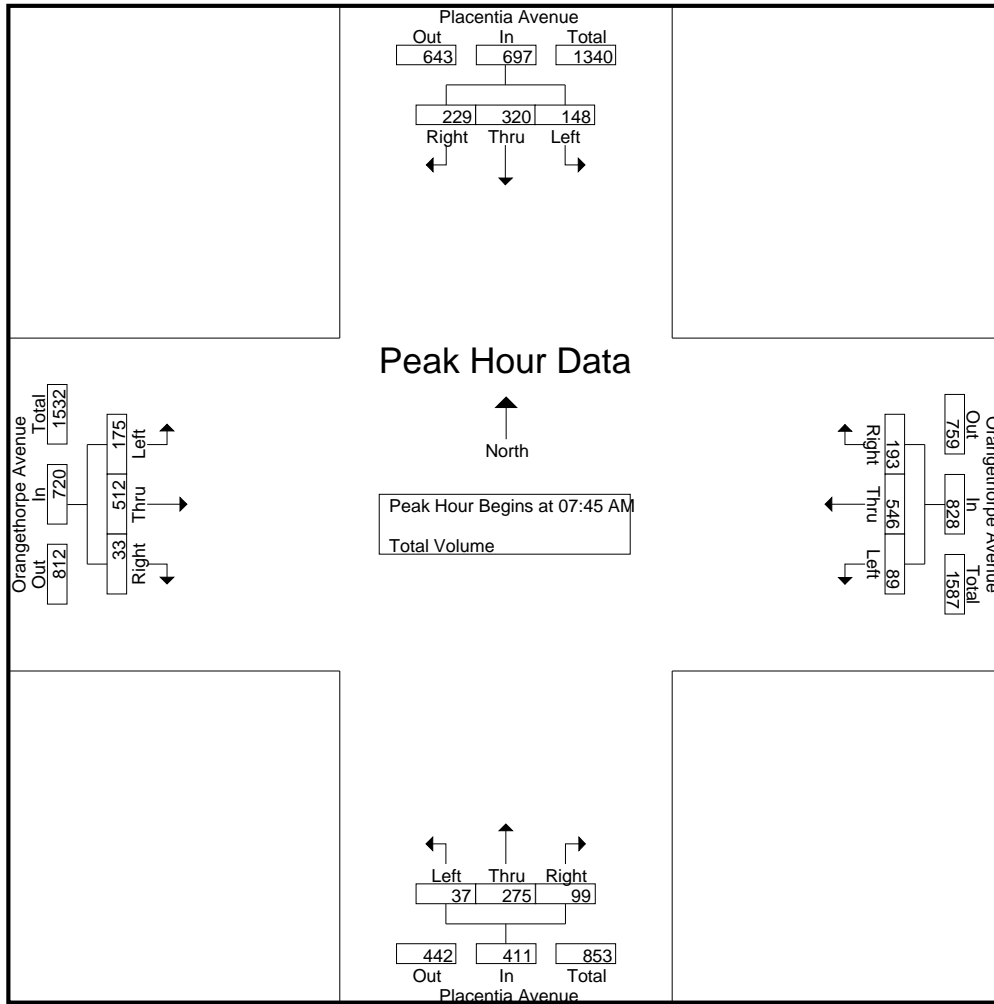
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Orangethorpe Avenue Westbound				Placentia Avenue Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	22	61	41	124	12	77	17	106	5	35	14	54	24	94	8	126	410
07:15 AM	57	72	54	183	23	90	24	137	11	65	33	109	28	108	4	140	569
07:30 AM	27	79	50	156	15	113	42	170	6	90	25	121	44	131	8	183	630
07:45 AM	44	82	75	201	23	123	58	204	12	83	32	127	52	144	9	205	737
Total	150	294	220	664	73	403	141	617	34	273	104	411	148	477	29	654	2346
08:00 AM	34	88	68	190	19	165	53	237	8	76	28	112	40	117	11	168	707
08:15 AM	36	66	34	136	26	116	34	176	9	62	13	84	42	130	5	177	573
08:30 AM	34	84	52	170	21	142	48	211	8	54	26	88	41	121	8	170	639
08:45 AM	49	87	47	183	23	100	46	169	6	47	14	67	40	92	14	146	565
Total	153	325	201	679	89	523	181	793	31	239	81	351	163	460	38	661	2484
Grand Total	303	619	421	1343	162	926	322	1410	65	512	185	762	311	937	67	1315	4830
Apprch %	22.6	46.1	31.3		11.5	65.7	22.8		8.5	67.2	24.3		23.7	71.3	5.1		
Total %	6.3	12.8	8.7	27.8	3.4	19.2	6.7	29.2	1.3	10.6	3.8	15.8	6.4	19.4	1.4	27.2	

Start Time	Placentia Avenue Southbound				Orangethorpe Avenue Westbound				Placentia Avenue Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	<b>44</b>	<b>82</b>	<b>75</b>	<b>201</b>	23	123	<b>58</b>	204	<b>12</b>	<b>83</b>	<b>32</b>	<b>127</b>	<b>52</b>	<b>144</b>	9	<b>205</b>	<b>737</b>
08:00 AM	34	<b>88</b>	68	190	19	<b>165</b>	53	<b>237</b>	8	76	28	112	40	117	<b>11</b>	168	707
08:15 AM	36	66	34	136	<b>26</b>	116	34	176	9	62	13	84	42	130	5	177	573
08:30 AM	34	84	52	170	21	142	48	211	8	54	26	88	41	121	8	170	639
Total Volume	148	320	229	697	89	546	193	828	37	275	99	411	175	512	33	720	2656
% App. Total	21.2	45.9	32.9		10.7	65.9	23.3		9	66.9	24.1		24.3	71.1	4.6		
PHF	.841	.909	.763	.867	.856	.827	.832	.873	.771	.828	.773	.809	.841	.889	.750	.878	.901

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 29PLAPLORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				07:15 AM				07:30 AM			
+0 mins.	57	72	54	183	23	123	<b>58</b>	204	11	65	<b>33</b>	109	44	131	8	183
+15 mins.	27	79	50	156	19	<b>165</b>	53	<b>237</b>	6	<b>90</b>	25	121	<b>52</b>	<b>144</b>	9	<b>205</b>
+30 mins.	44	82	<b>75</b>	<b>201</b>	<b>26</b>	116	34	176	<b>12</b>	83	32	<b>127</b>	40	117	<b>11</b>	168
+45 mins.	34	<b>88</b>	68	190	21	142	48	211	8	76	28	112	42	130	5	177
Total Volume	162	321	247	730	89	546	193	828	37	314	118	469	178	522	33	733
% App. Total	22.2	44	33.8		10.7	65.9	23.3		7.9	67	25.2		24.3	71.2	4.5	
PHF	.711	.912	.823	.908	.856	.827	.832	.873	.771	.872	.894	.923	.856	.906	.750	.894



City of Placentia  
 N/S: Placentia Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 29PLAPLORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

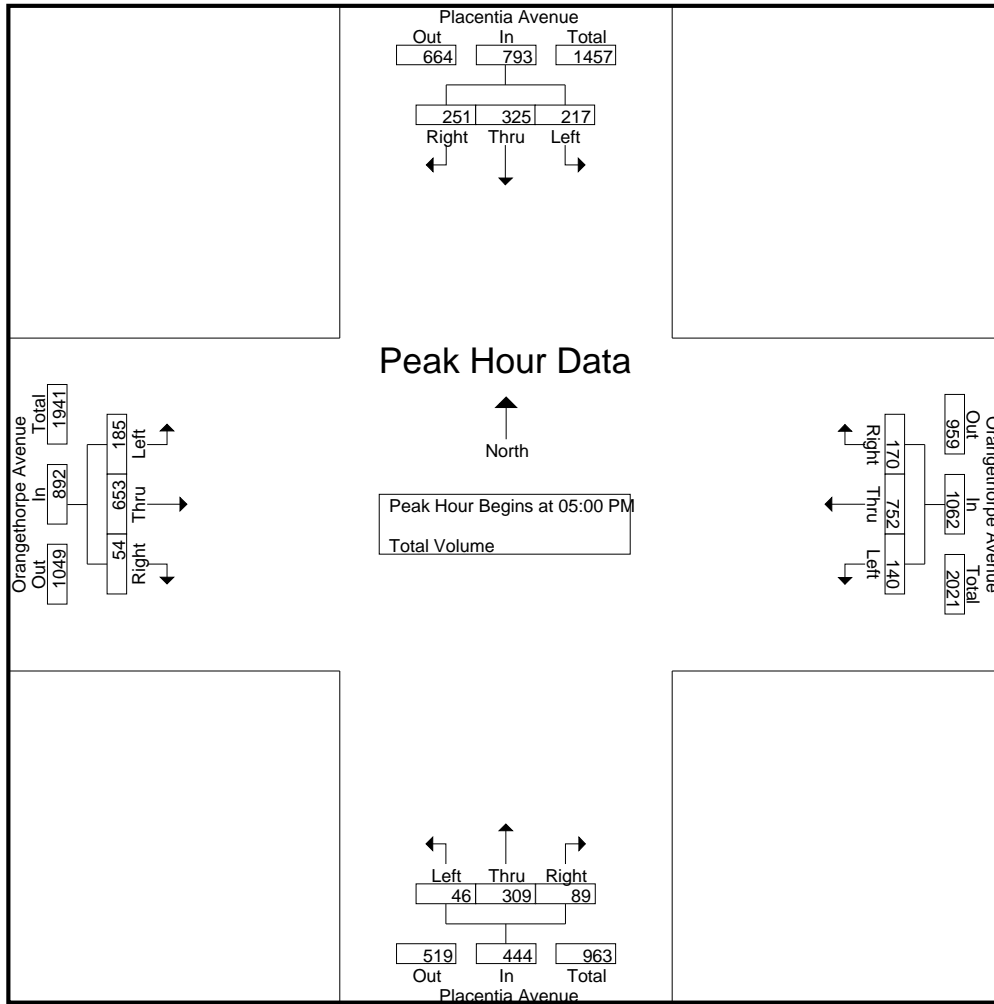
Groups Printed- Total Volume

Start Time	Placentia Avenue Southbound				Orangethorpe Avenue Westbound				Placentia Avenue Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	45	79	58	182	34	114	31	179	13	66	36	115	41	172	13	226	702
04:15 PM	56	79	58	193	35	135	32	202	12	58	25	95	43	160	10	213	703
04:30 PM	58	70	66	194	27	152	35	214	12	59	40	111	49	189	20	258	777
04:45 PM	51	60	50	161	26	133	29	188	19	69	29	117	35	172	11	218	684
Total	210	288	232	730	122	534	127	783	56	252	130	438	168	693	54	915	2866
05:00 PM	64	63	63	190	37	150	42	229	17	76	27	120	47	183	14	244	783
05:15 PM	65	94	70	229	23	166	43	232	6	92	26	124	45	162	23	230	815
05:30 PM	44	73	62	179	35	174	39	248	9	75	19	103	51	170	7	228	758
05:45 PM	44	95	56	195	45	262	46	353	14	66	17	97	42	138	10	190	835
Total	217	325	251	793	140	752	170	1062	46	309	89	444	185	653	54	892	3191
Grand Total	427	613	483	1523	262	1286	297	1845	102	561	219	882	353	1346	108	1807	6057
Apprch %	28	40.2	31.7		14.2	69.7	16.1		11.6	63.6	24.8		19.5	74.5	6		
Total %	7	10.1	8	25.1	4.3	21.2	4.9	30.5	1.7	9.3	3.6	14.6	5.8	22.2	1.8	29.8	

Start Time	Placentia Avenue Southbound				Orangethorpe Avenue Westbound				Placentia Avenue Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	64	63	63	190	37	150	42	229	17	76	27	120	47	183	14	244	783
05:15 PM	65	94	70	229	23	166	43	232	6	92	26	124	45	162	23	230	815
05:30 PM	44	73	62	179	35	174	39	248	9	75	19	103	51	170	7	228	758
05:45 PM	44	95	56	195	45	262	46	353	14	66	17	97	42	138	10	190	835
Total Volume	217	325	251	793	140	752	170	1062	46	309	89	444	185	653	54	892	3191
% App. Total	27.4	41	31.7		13.2	70.8	16		10.4	69.6	20		20.7	73.2	6.1		
PHF	.835	.855	.896	.866	.778	.718	.924	.752	.676	.840	.824	.895	.907	.892	.587	.914	.955

City of Placentia  
 N/S: Placentia Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 29PLAPLORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:30 PM				04:30 PM			
+0 mins.	64	63	63	190	37	150	42	229	12	59	<b>40</b>	111	<b>49</b>	<b>189</b>	20	<b>258</b>
+15 mins.	<b>65</b>	94	<b>70</b>	<b>229</b>	23	166	43	232	<b>19</b>	69	29	117	35	172	11	218
+30 mins.	44	73	62	179	35	174	39	248	17	76	27	120	47	183	14	244
+45 mins.	44	<b>95</b>	56	195	<b>45</b>	<b>262</b>	<b>46</b>	<b>353</b>	6	<b>92</b>	26	<b>124</b>	45	162	<b>23</b>	230
Total Volume	217	325	251	793	140	752	170	1062	54	296	122	472	176	706	68	950
% App. Total	27.4	41	31.7		13.2	70.8	16		11.4	62.7	25.8		18.5	74.3	7.2	
PHF	.835	.855	.896	.866	.778	.718	.924	.752	.711	.804	.763	.952	.898	.934	.739	.921

City of Placentia  
 N/S: State Route 57 Southbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 30PLA57SORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

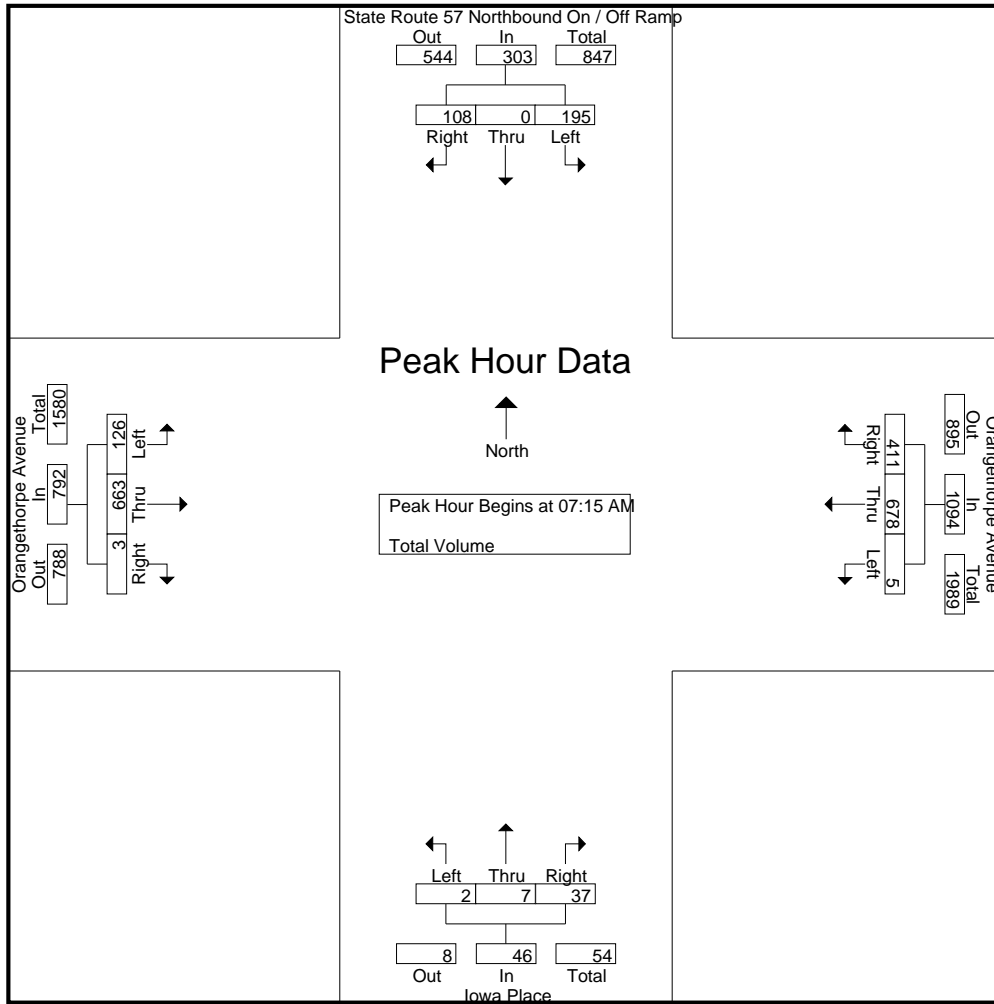
Start Time	State Route 57 Northbound On / Off Ramp Southbound				Orangethorpe Avenue Westbound				Iowa Place Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	42	0	20	62	0	118	107	225	0	3	2	5	14	113	0	127	419
07:15 AM	48	0	25	73	2	120	110	232	0	2	5	7	44	164	0	208	520
07:30 AM	40	0	23	63	1	162	106	269	1	1	14	16	32	159	1	192	540
07:45 AM	62	0	31	93	1	184	97	282	0	2	6	8	27	182	0	209	592
Total	192	0	99	291	4	584	420	1008	1	8	27	36	117	618	1	736	2071
08:00 AM	45	0	29	74	1	212	98	311	1	2	12	15	23	158	2	183	583
08:15 AM	45	1	35	81	0	167	97	264	1	3	7	11	34	122	0	156	512
08:30 AM	51	0	31	82	0	172	88	260	0	3	2	5	25	152	0	177	524
08:45 AM	45	0	43	88	0	133	85	218	1	2	2	5	38	129	2	169	480
Total	186	1	138	325	1	684	368	1053	3	10	23	36	120	561	4	685	2099
Grand Total	378	1	237	616	5	1268	788	2061	4	18	50	72	237	1179	5	1421	4170
Apprch %	61.4	0.2	38.5		0.2	61.5	38.2		5.6	25	69.4		16.7	83	0.4		
Total %	9.1	0	5.7	14.8	0.1	30.4	18.9	49.4	0.1	0.4	1.2	1.7	5.7	28.3	0.1	34.1	

Start Time	State Route 57 Northbound On / Off Ramp Southbound				Orangethorpe Avenue Westbound				Iowa Place Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:15 AM	48	0	25	73	2	120	110	232	0	2	5	7	44	164	0	208	520
07:30 AM	40	0	23	63	1	162	106	269	1	1	14	16	32	159	1	192	540
07:45 AM	62	0	31	93	1	184	97	282	0	2	6	8	27	182	0	209	592
08:00 AM	45	0	29	74	1	212	98	311	1	2	12	15	23	158	2	183	583
Total Volume	195	0	108	303	5	678	411	1094	2	7	37	46	126	663	3	792	2235
% App. Total	64.4	0	35.6		0.5	62	37.6		4.3	15.2	80.4		15.9	83.7	0.4		
PHF	.786	.000	.871	.815	.625	.800	.934	.879	.500	.875	.661	.719	.716	.911	.375	.947	.944

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:15 AM

City of Placentia  
 N/S: State Route 57 Southbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 30PLA57SORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	<b>62</b>	0	31	<b>93</b>	<b>1</b>	162	<b>106</b>	269	<b>1</b>	1	<b>14</b>	<b>16</b>	<b>44</b>	164	0	208
+15 mins.	45	0	29	74	1	184	97	282	0	2	6	8	32	159	1	192
+30 mins.	45	<b>1</b>	<b>35</b>	81	1	<b>212</b>	98	<b>311</b>	1	2	12	15	27	<b>182</b>	0	<b>209</b>
+45 mins.	51	0	31	82	0	167	97	264	1	<b>3</b>	7	11	23	158	<b>2</b>	183
Total Volume	203	1	126	330	3	725	398	1126	3	8	39	50	126	663	3	792
% App. Total	61.5	0.3	38.2		0.3	64.4	35.3		6	16	78		15.9	83.7	0.4	
PHF	.819	.250	.900	.887	.750	.855	.939	.905	.750	.667	.696	.781	.716	.911	.375	.947

City of Placentia  
 N/S: State Route 57 Southbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 30PLA57SORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

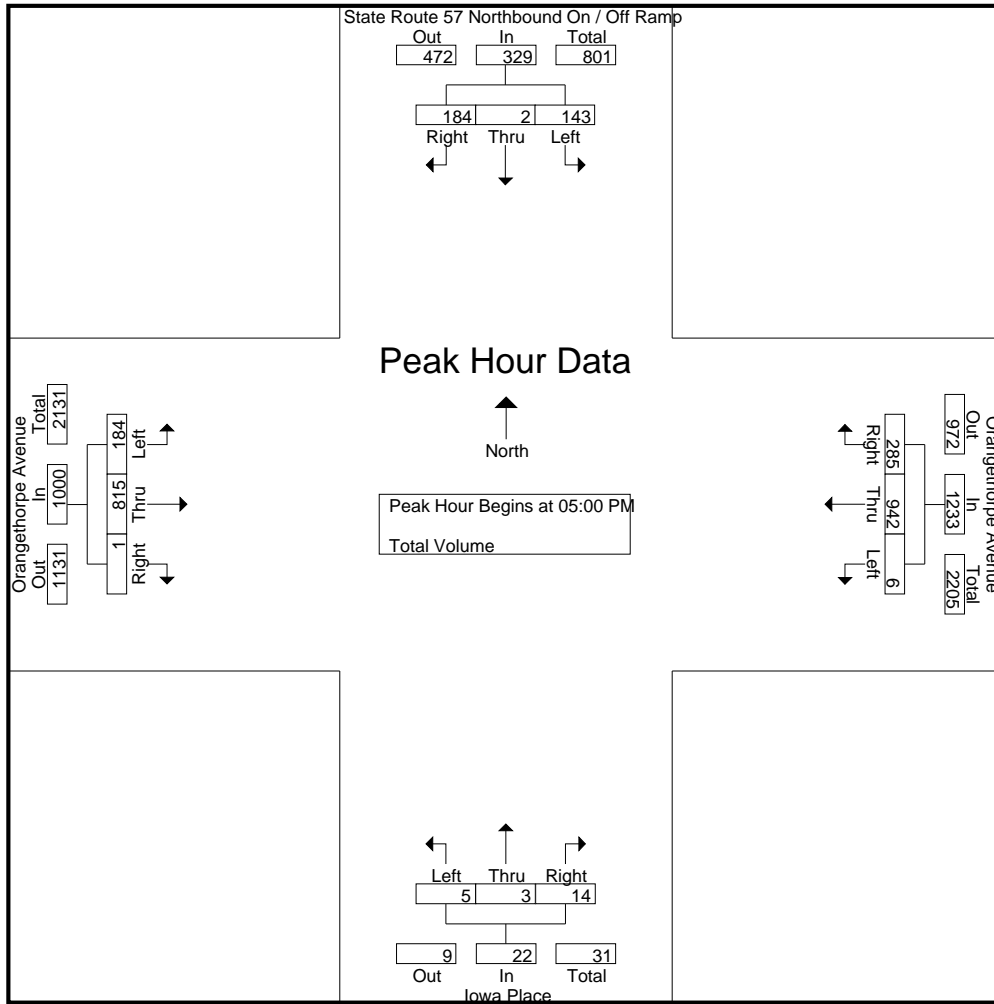
Groups Printed- Total Volume

Start Time	State Route 57 Northbound On / Off Ramp Southbound				Orangethorpe Avenue Westbound				Iowa Place Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	47	0	35	82	0	145	90	235	0	1	2	3	64	209	0	273	593
04:15 PM	21	0	39	60	0	169	77	246	0	1	5	6	46	207	1	254	566
04:30 PM	37	0	41	78	2	161	118	281	0	0	2	2	63	233	1	297	658
04:45 PM	44	0	39	83	0	184	104	288	0	2	2	4	57	191	2	250	625
<b>Total</b>	<b>149</b>	<b>0</b>	<b>154</b>	<b>303</b>	<b>2</b>	<b>659</b>	<b>389</b>	<b>1050</b>	<b>0</b>	<b>4</b>	<b>11</b>	<b>15</b>	<b>230</b>	<b>840</b>	<b>4</b>	<b>1074</b>	<b>2442</b>
05:00 PM	37	0	44	81	2	201	97	300	2	1	5	8	58	216	1	275	664
05:15 PM	31	0	28	59	2	210	74	286	2	0	5	7	55	209	0	264	616
05:30 PM	44	1	53	98	0	238	56	294	0	1	2	3	40	205	0	245	640
05:45 PM	31	1	59	91	2	293	58	353	1	1	2	4	31	185	0	216	664
<b>Total</b>	<b>143</b>	<b>2</b>	<b>184</b>	<b>329</b>	<b>6</b>	<b>942</b>	<b>285</b>	<b>1233</b>	<b>5</b>	<b>3</b>	<b>14</b>	<b>22</b>	<b>184</b>	<b>815</b>	<b>1</b>	<b>1000</b>	<b>2584</b>
<b>Grand Total</b>	<b>292</b>	<b>2</b>	<b>338</b>	<b>632</b>	<b>8</b>	<b>1601</b>	<b>674</b>	<b>2283</b>	<b>5</b>	<b>7</b>	<b>25</b>	<b>37</b>	<b>414</b>	<b>1655</b>	<b>5</b>	<b>2074</b>	<b>5026</b>
Apprch %	46.2	0.3	53.5		0.4	70.1	29.5		13.5	18.9	67.6		20	79.8	0.2		
Total %	5.8	0	6.7	12.6	0.2	31.9	13.4	45.4	0.1	0.1	0.5	0.7	8.2	32.9	0.1	41.3	

Start Time	State Route 57 Northbound On / Off Ramp Southbound				Orangethorpe Avenue Westbound				Iowa Place Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	37	0	44	81	2	201	97	300	2	1	5	8	58	216	1	275	664
05:15 PM	31	0	28	59	2	210	74	286	2	0	5	7	55	209	0	264	616
05:30 PM	44	1	53	98	0	238	56	294	0	1	2	3	40	205	0	245	640
05:45 PM	31	1	59	91	2	293	58	353	1	1	2	4	31	185	0	216	664
<b>Total Volume</b>	<b>143</b>	<b>2</b>	<b>184</b>	<b>329</b>	<b>6</b>	<b>942</b>	<b>285</b>	<b>1233</b>	<b>5</b>	<b>3</b>	<b>14</b>	<b>22</b>	<b>184</b>	<b>815</b>	<b>1</b>	<b>1000</b>	<b>2584</b>
% App. Total	43.5	0.6	55.9		0.5	76.4	23.1		22.7	13.6	63.6		18.4	81.5	0.1		
PHF	.813	.500	.780	.839	.750	.804	.735	.873	.625	.750	.700	.688	.793	.943	.250	.909	.973

City of Placentia  
 N/S: State Route 57 Southbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 30PLA57SORPM  
 Site Code : 22117718  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:45 PM				04:30 PM			
+0 mins.	37	0	44	81	<b>2</b>	201	<b>97</b>	300	0	<b>2</b>	2	4	<b>63</b>	<b>233</b>	1	<b>297</b>
+15 mins.	31	0	28	59	2	210	74	286	<b>2</b>	1	<b>5</b>	<b>8</b>	57	191	<b>2</b>	250
+30 mins.	<b>44</b>	<b>1</b>	53	<b>98</b>	0	238	56	294	2	0	5	7	58	216	1	275
+45 mins.	31	1	<b>59</b>	91	2	<b>293</b>	58	<b>353</b>	0	1	2	3	55	209	0	264
Total Volume	143	2	184	329	6	942	285	1233	4	4	14	22	233	849	4	1086
% App. Total	43.5	0.6	55.9		0.5	76.4	23.1		18.2	18.2	63.6		21.5	78.2	0.4	
PHF	.813	.500	.780	.839	.750	.804	.735	.873	.500	.500	.700	.688	.925	.911	.500	.914

City of Placentia  
 N/S: State Route 57 Northbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 31PLA57NORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

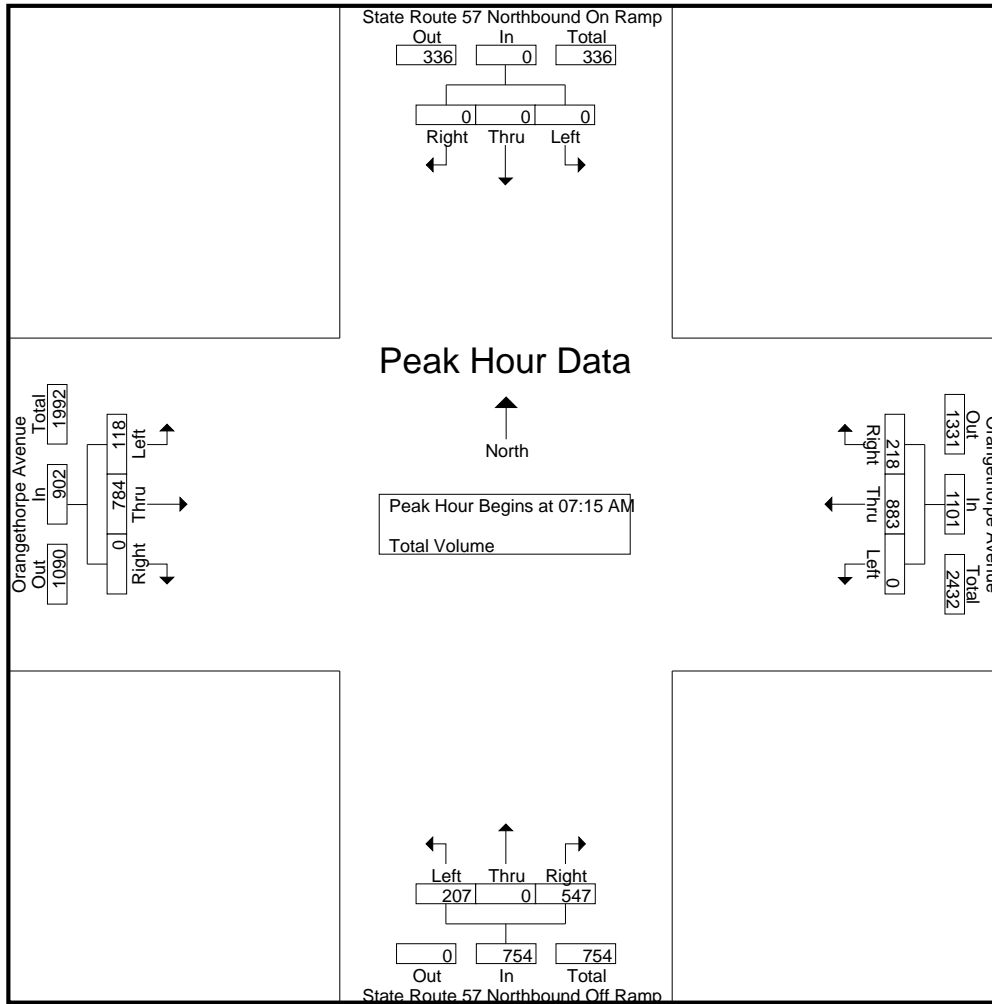
Groups Printed- Total Volume

Start Time	State Route 57 Northbound On Ramp Southbound				Orangethorpe Avenue Westbound				State Route 57 Northbound Off Ramp Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	194	53	247	29	0	130	159	22	138	0	160	566
07:15 AM	0	0	0	0	0	186	38	224	42	0	123	165	34	199	0	233	622
07:30 AM	0	0	0	0	0	217	57	274	39	0	129	168	41	163	0	204	646
07:45 AM	0	0	0	0	0	255	58	313	59	0	154	213	20	241	0	261	787
Total	0	0	0	0	0	852	206	1058	169	0	536	705	117	741	0	858	2621
08:00 AM	0	0	0	0	0	225	65	290	67	0	141	208	23	181	0	204	702
08:15 AM	0	0	0	0	0	208	51	259	37	0	101	138	24	152	0	176	573
08:30 AM	0	0	0	0	0	218	49	267	57	0	89	146	37	173	0	210	623
08:45 AM	0	0	0	0	0	161	58	219	59	0	128	187	31	147	0	178	584
Total	0	0	0	0	0	812	223	1035	220	0	459	679	115	653	0	768	2482
Grand Total	0	0	0	0	0	1664	429	2093	389	0	995	1384	232	1394	0	1626	5103
Apprch %	0	0	0	0	0	79.5	20.5		28.1	0	71.9		14.3	85.7	0		
Total %	0	0	0	0	0	32.6	8.4	41	7.6	0	19.5	27.1	4.5	27.3	0	31.9	

Start Time	State Route 57 Northbound On Ramp Southbound				Orangethorpe Avenue Westbound				State Route 57 Northbound Off Ramp Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	186	38	224	42	0	123	165	34	199	0	233	622
07:30 AM	0	0	0	0	0	217	57	274	39	0	129	168	41	163	0	204	646
07:45 AM	0	0	0	0	0	255	58	313	59	0	154	213	20	241	0	261	787
08:00 AM	0	0	0	0	0	225	65	290	67	0	141	208	23	181	0	204	702
Total Volume	0	0	0	0	0	883	218	1101	207	0	547	754	118	784	0	902	2757
% App. Total	0	0	0	0	0	80.2	19.8		27.5	0	72.5		13.1	86.9	0		
PHF	.000	.000	.000	.000	.000	.866	.838	.879	.772	.000	.888	.885	.720	.813	.000	.864	.876

City of Placentia  
 N/S: State Route 57 Northbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 31PLA57NORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	217	57	274	42	0	123	165	34	199	0	233
+15 mins.	0	0	0	0	0	<b>255</b>	58	<b>313</b>	39	0	129	168	<b>41</b>	163	0	204
+30 mins.	0	0	0	0	0	225	<b>65</b>	290	59	0	<b>154</b>	<b>213</b>	20	<b>241</b>	0	<b>261</b>
+45 mins.	0	0	0	0	0	208	51	259	<b>67</b>	0	141	208	23	181	0	204
Total Volume	0	0	0	0	0	905	231	1136	207	0	547	754	118	784	0	902
% App. Total	0	0	0	0	0	79.7	20.3		27.5	0	72.5		13.1	86.9	0	
PHF	.000	.000	.000	.000	.000	.887	.888	.907	.772	.000	.888	.885	.720	.813	.000	.864



City of Placentia  
 N/S: State Route 57 Northbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 31PLA57NORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

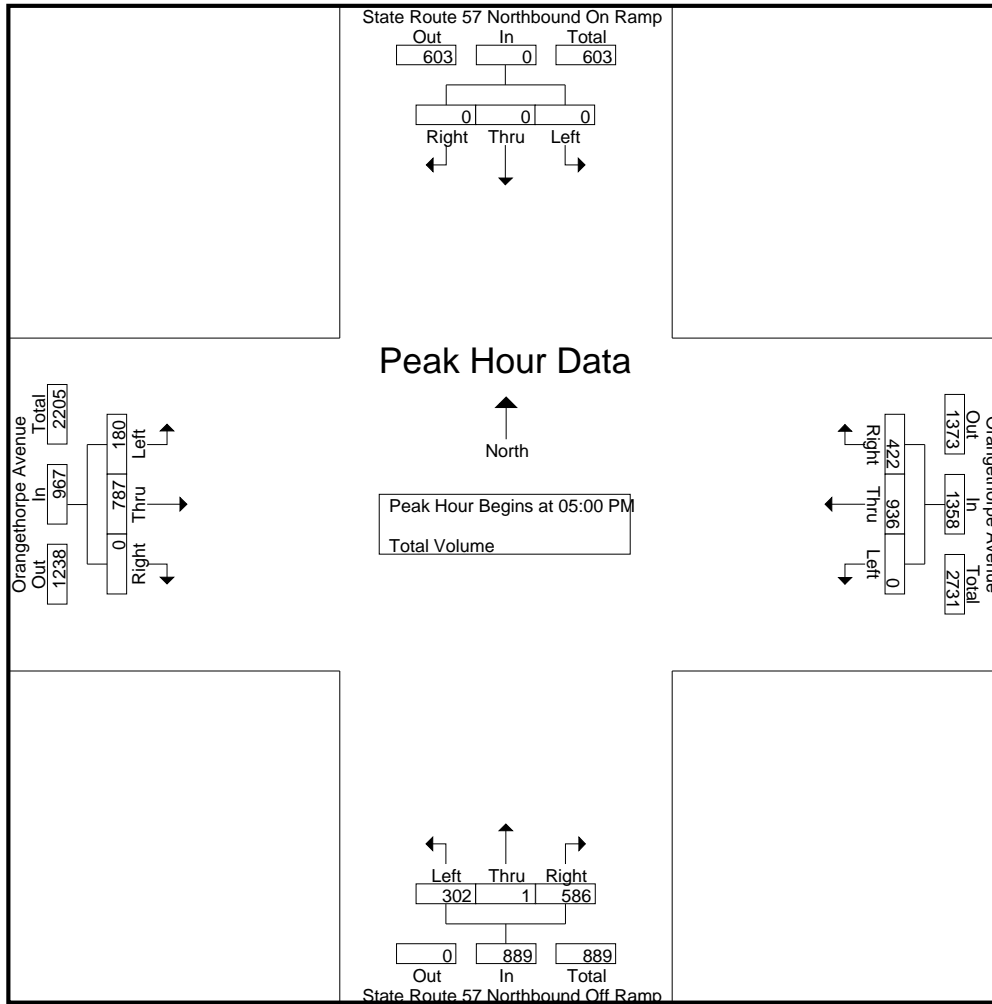
Start Time	State Route 57 Northbound On Ramp Southbound				Orangethorpe Avenue Westbound				State Route 57 Northbound Off Ramp Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	228	134	362	36	3	133	172	56	206	0	262	796
04:15 PM	0	0	0	0	0	200	94	294	41	0	122	163	39	173	0	212	669
04:30 PM	0	0	0	0	0	245	99	344	37	0	124	161	63	218	0	281	786
04:45 PM	0	0	0	0	0	222	110	332	47	3	142	192	36	196	0	232	756
Total	0	0	0	0	0	895	437	1332	161	6	521	688	194	793	0	987	3007
05:00 PM	0	0	0	0	0	256	118	374	41	0	136	177	59	213	0	272	823
05:15 PM	0	0	0	0	0	253	105	358	46	0	153	199	44	205	0	249	806
05:30 PM	0	0	0	0	0	221	116	337	74	1	135	210	36	202	0	238	785
05:45 PM	0	0	0	0	0	206	83	289	141	0	162	303	41	167	0	208	800
Total	0	0	0	0	0	936	422	1358	302	1	586	889	180	787	0	967	3214
Grand Total	0	0	0	0	0	1831	859	2690	463	7	1107	1577	374	1580	0	1954	6221
Apprch %	0	0	0	0	0	68.1	31.9		29.4	0.4	70.2		19.1	80.9	0		
Total %	0	0	0	0	0	29.4	13.8	43.2	7.4	0.1	17.8	25.3	6	25.4	0	31.4	

Start Time	State Route 57 Northbound On Ramp Southbound				Orangethorpe Avenue Westbound				State Route 57 Northbound Off Ramp Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:00 PM	0	0	0	0	0	<b>256</b>	<b>118</b>	<b>374</b>	41	0	136	177	<b>59</b>	<b>213</b>	0	<b>272</b>	<b>823</b>
05:15 PM	0	0	0	0	0	253	105	358	46	0	153	199	44	205	0	249	806
05:30 PM	0	0	0	0	0	221	116	337	74	1	135	210	36	202	0	238	785
05:45 PM	0	0	0	0	0	206	83	289	<b>141</b>	0	<b>162</b>	<b>303</b>	41	167	0	208	800
Total Volume	0	0	0	0	0	936	422	1358	302	1	586	889	180	787	0	967	3214
% App. Total	0	0	0	0	0	68.9	31.1		34	0.1	65.9		18.6	81.4	0		
PHF	.000	.000	.000	.000	.000	.914	.894	.908	.535	.250	.904	.733	.763	.924	.000	.889	.976

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 05:00 PM

City of Placentia  
 N/S: State Route 57 Northbound Ramps  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 31PLA57NORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				05:00 PM				04:30 PM			
+0 mins.	0	0	0	0	0	245	99	344	41	0	136	177	<b>63</b>	<b>218</b>	0	<b>281</b>
+15 mins.	0	0	0	0	0	222	110	332	46	0	153	199	36	196	0	232
+30 mins.	0	0	0	0	0	<b>256</b>	<b>118</b>	<b>374</b>	74	<b>1</b>	135	210	59	213	0	272
+45 mins.	0	0	0	0	0	253	105	358	<b>141</b>	0	<b>162</b>	<b>303</b>	44	205	0	249
Total Volume	0	0	0	0	0	976	432	1408	302	1	586	889	202	832	0	1034
% App. Total	0	0	0	0	0	69.3	30.7		34	0.1	65.9		19.5	80.5	0	
PHF	.000	.000	.000	.000	.000	.953	.915	.941	.535	.250	.904	.733	.802	.954	.000	.920

City of Placentia  
 N/S: Melrose Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 32PLAMEORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

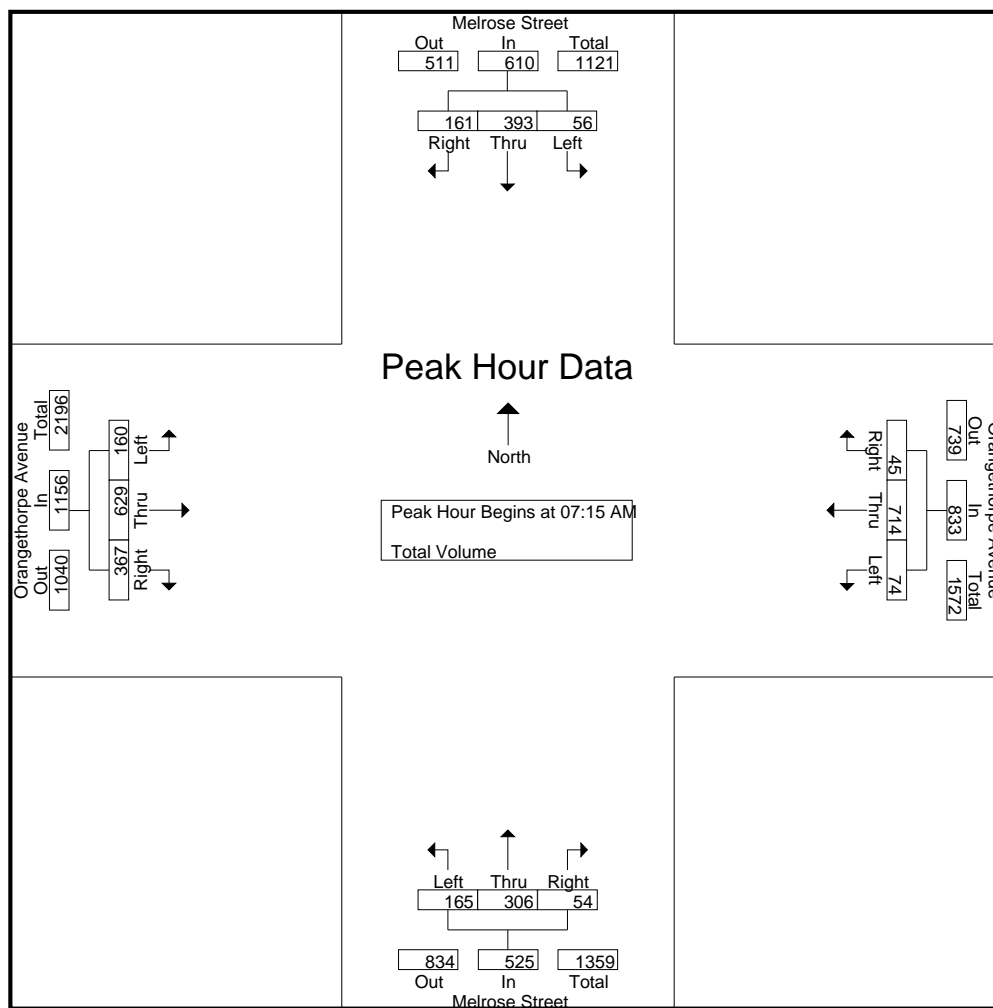
Groups Printed- Total Volume

Start Time	Melrose Street Southbound				Orangethorpe Avenue Westbound				Melrose Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	46	39	88	6	132	8	146	44	36	3	83	26	107	108	241	558
07:15 AM	17	65	39	121	12	160	8	180	30	65	12	107	43	153	87	283	691
07:30 AM	13	90	35	138	22	184	16	222	48	120	7	175	44	127	75	246	781
07:45 AM	13	138	50	201	16	172	16	204	42	80	15	137	42	181	109	332	874
Total	46	339	163	548	56	648	48	752	164	301	37	502	155	568	379	1102	2904
08:00 AM	13	100	37	150	24	198	5	227	45	41	20	106	31	168	96	295	778
08:15 AM	12	45	32	89	19	166	5	190	57	33	20	110	21	149	78	248	637
08:30 AM	10	41	26	77	9	160	4	173	61	42	13	116	20	132	94	246	612
08:45 AM	7	41	26	74	11	151	5	167	33	29	11	73	24	136	89	249	563
Total	42	227	121	390	63	675	19	757	196	145	64	405	96	585	357	1038	2590
Grand Total	88	566	284	938	119	1323	67	1509	360	446	101	907	251	1153	736	2140	5494
Apprch %	9.4	60.3	30.3		7.9	87.7	4.4		39.7	49.2	11.1		11.7	53.9	34.4		
Total %	1.6	10.3	5.2	17.1	2.2	24.1	1.2	27.5	6.6	8.1	1.8	16.5	4.6	21	13.4	39	

Start Time	Melrose Street Southbound				Orangethorpe Avenue Westbound				Melrose Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	17	65	39	121	12	160	8	180	30	65	12	107	43	153	87	283	691
07:30 AM	13	90	35	138	22	184	16	222	48	120	7	175	44	127	75	246	781
07:45 AM	13	138	50	201	16	172	16	204	42	80	15	137	42	181	109	332	874
08:00 AM	13	100	37	150	24	198	5	227	45	41	20	106	31	168	96	295	778
Total Volume	56	393	161	610	74	714	45	833	165	306	54	525	160	629	367	1156	3124
% App. Total	9.2	64.4	26.4		8.9	85.7	5.4		31.4	58.3	10.3		13.8	54.4	31.7		
PHF	.824	.712	.805	.759	.771	.902	.703	.917	.859	.638	.675	.750	.909	.869	.842	.870	.894

City of Placentia  
 N/S: Melrose Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 32PLAMEORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	17	65	39	121	22	184	16	222	48	120	7	175	43	153	87	283
+15 mins.	13	90	35	138	16	172	16	204	42	80	15	137	44	127	75	246
+30 mins.	13	138	50	201	24	198	5	227	45	41	20	106	42	181	109	332
+45 mins.	13	100	37	150	19	166	5	190	57	33	20	110	31	168	96	295
Total Volume	56	393	161	610	81	720	42	843	192	274	62	528	160	629	367	1156
% App. Total	9.2	64.4	26.4		9.6	85.4	5		36.4	51.9	11.7		13.8	54.4	31.7	
PHF	.824	.712	.805	.759	.844	.909	.656	.928	.842	.571	.775	.754	.909	.869	.842	.870

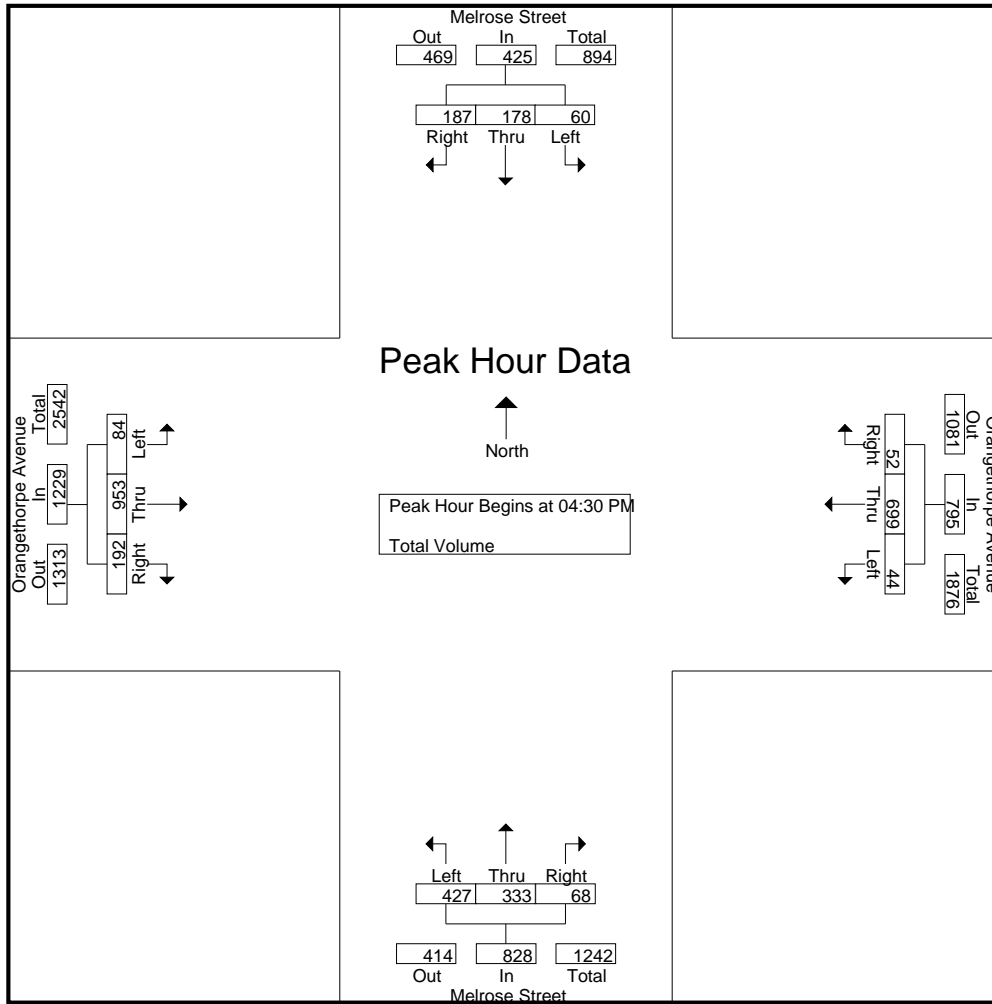
City of Placentia  
 N/S: Melrose Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 32PLAMEORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Melrose Street Southbound				Orangethorpe Avenue Westbound				Melrose Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	18	51	36	105	14	168	12	194	123	69	21	213	33	214	56	303	815
04:15 PM	16	45	47	108	13	155	11	179	92	66	16	174	28	200	38	266	727
04:30 PM	15	34	56	105	8	182	10	200	96	84	18	198	13	238	58	309	812
04:45 PM	13	53	50	116	10	148	15	173	111	65	16	192	24	217	49	290	771
Total	62	183	189	434	45	653	48	746	422	284	71	777	98	869	201	1168	3125
05:00 PM	17	35	54	106	15	192	12	219	117	102	13	232	22	236	38	296	853
05:15 PM	15	56	27	98	11	177	15	203	103	82	21	206	25	262	47	334	841
05:30 PM	16	51	45	112	11	190	6	207	100	65	11	176	15	243	45	303	798
05:45 PM	13	34	25	72	17	184	11	212	63	51	10	124	28	285	32	345	753
Total	61	176	151	388	54	743	44	841	383	300	55	738	90	1026	162	1278	3245
Grand Total	123	359	340	822	99	1396	92	1587	805	584	126	1515	188	1895	363	2446	6370
Apprch %	15	43.7	41.4		6.2	88	5.8		53.1	38.5	8.3		7.7	77.5	14.8		
Total %	1.9	5.6	5.3	12.9	1.6	21.9	1.4	24.9	12.6	9.2	2	23.8	3	29.7	5.7	38.4	

Start Time	Melrose Street Southbound				Orangethorpe Avenue Westbound				Melrose Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	15	34	<b>56</b>	105	8	182	10	200	96	84	18	198	13	238	<b>58</b>	309	812
04:45 PM	13	53	50	<b>116</b>	10	148	<b>15</b>	173	111	65	16	192	24	217	49	290	771
05:00 PM	<b>17</b>	35	54	106	<b>15</b>	<b>192</b>	12	<b>219</b>	<b>117</b>	<b>102</b>	13	<b>232</b>	22	236	38	296	<b>853</b>
05:15 PM	15	<b>56</b>	27	98	11	177	15	203	103	82	<b>21</b>	206	<b>25</b>	<b>262</b>	47	<b>334</b>	841
Total Volume	60	178	187	425	44	699	52	795	427	333	68	828	84	953	192	1229	3277
% App. Total	14.1	41.9	44		5.5	87.9	6.5		51.6	40.2	8.2		6.8	77.5	15.6		
PHF	.882	.795	.835	.916	.733	.910	.867	.908	.912	.816	.810	.892	.840	.909	.828	.920	.960



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				05:00 PM				04:30 PM				05:00 PM			
+0 mins.	16	45	47	108	15	<b>192</b>	12	<b>219</b>	96	84	18	198	22	236	38	296
+15 mins.	15	34	<b>56</b>	105	11	177	<b>15</b>	203	111	65	16	192	25	262	<b>47</b>	334
+30 mins.	13	<b>53</b>	50	<b>116</b>	11	190	6	207	<b>117</b>	<b>102</b>	13	<b>232</b>	15	243	45	303
+45 mins.	<b>17</b>	35	54	106	<b>17</b>	184	11	212	103	82	<b>21</b>	206	<b>28</b>	<b>285</b>	32	<b>345</b>
Total Volume	61	167	207	435	54	743	44	841	427	333	68	828	90	1026	162	1278
% App. Total	14	38.4	47.6		6.4	88.3	5.2		51.6	40.2	8.2		7	80.3	12.7	
PHF	.897	.788	.924	.938	.794	.967	.733	.960	.912	.816	.810	.892	.804	.900	.862	.926

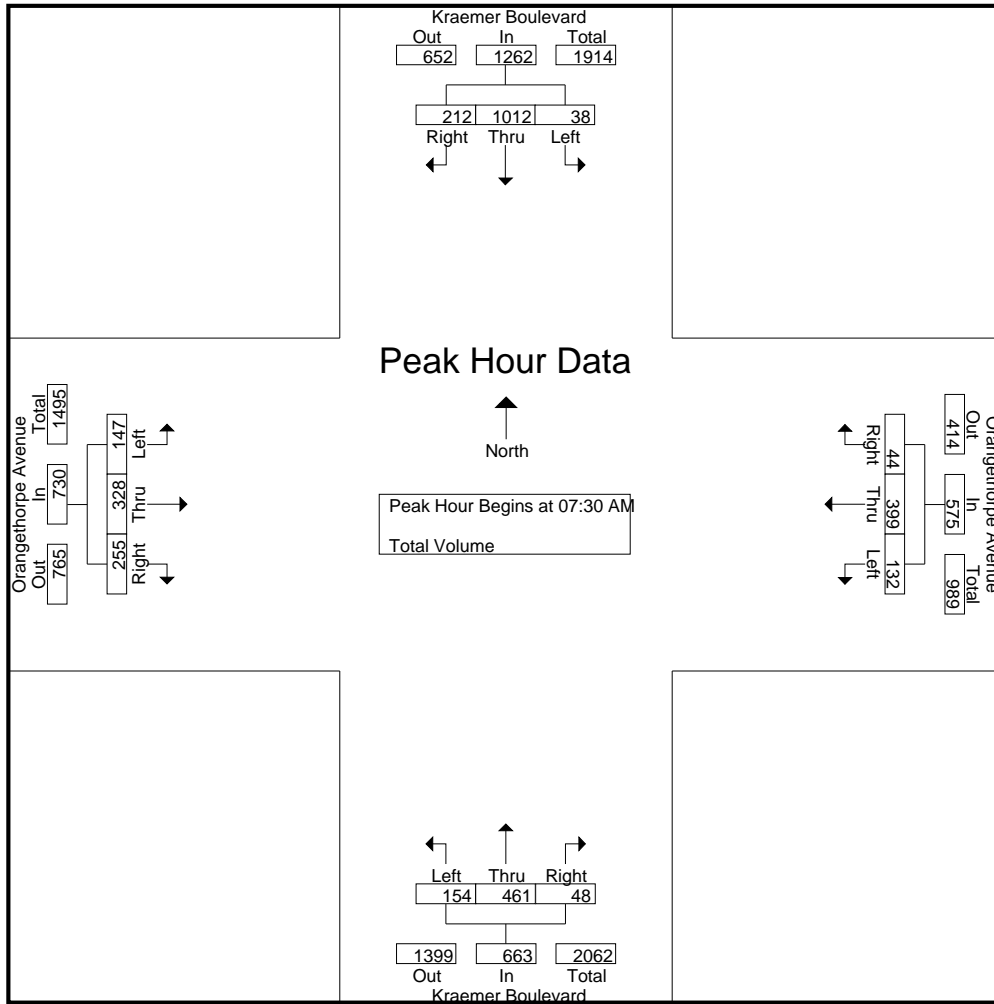
City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 33PLAKRORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Orangethorpe Avenue Westbound				Kraemer Boulevard Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	5	223	46	274	30	71	2	103	19	37	9	65	21	40	46	107	549
07:15 AM	8	214	58	280	25	94	3	122	24	86	17	127	28	82	66	176	705
07:30 AM	4	240	44	288	29	96	14	139	36	138	16	190	35	58	57	150	767
07:45 AM	13	272	61	346	38	120	16	174	38	124	10	172	40	117	61	218	910
Total	30	949	209	1188	122	381	35	538	117	385	52	554	124	297	230	651	2931
08:00 AM	11	282	53	346	42	93	8	143	46	102	14	162	35	73	73	181	832
08:15 AM	10	218	54	282	23	90	6	119	34	97	8	139	37	80	64	181	721
08:30 AM	10	175	41	226	28	77	6	111	36	79	14	129	27	57	58	142	608
08:45 AM	6	192	56	254	19	82	3	104	38	75	7	120	26	52	61	139	617
Total	37	867	204	1108	112	342	23	477	154	353	43	550	125	262	256	643	2778
Grand Total	67	1816	413	2296	234	723	58	1015	271	738	95	1104	249	559	486	1294	5709
Apprch %	2.9	79.1	18		23.1	71.2	5.7		24.5	66.8	8.6		19.2	43.2	37.6		
Total %	1.2	31.8	7.2	40.2	4.1	12.7	1	17.8	4.7	12.9	1.7	19.3	4.4	9.8	8.5	22.7	

Start Time	Kraemer Boulevard Southbound				Orangethorpe Avenue Westbound				Kraemer Boulevard Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	4	240	44	288	29	96	14	139	36	<b>138</b>	<b>16</b>	<b>190</b>	35	58	57	150	767
07:45 AM	<b>13</b>	<b>272</b>	<b>61</b>	<b>346</b>	38	<b>120</b>	<b>16</b>	<b>174</b>	38	124	10	172	<b>40</b>	<b>117</b>	61	<b>218</b>	<b>910</b>
08:00 AM	11	<b>282</b>	53	346	<b>42</b>	93	8	143	<b>46</b>	102	14	162	35	73	<b>73</b>	181	832
08:15 AM	10	218	54	282	23	90	6	119	34	97	8	139	37	80	64	181	721
Total Volume	38	1012	212	1262	132	399	44	575	154	461	48	663	147	328	255	730	3230
% App. Total	3	80.2	16.8		23	69.4	7.7		23.2	69.5	7.2		20.1	44.9	34.9		
PHF	.731	.897	.869	.912	.786	.831	.688	.826	.837	.835	.750	.872	.919	.701	.873	.837	.887



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:30 AM				07:30 AM			
+0 mins.	4	240	44	288	25	94	3	122	36	<b>138</b>	<b>16</b>	<b>190</b>	35	58	57	150
+15 mins.	<b>13</b>	272	<b>61</b>	<b>346</b>	29	96	14	139	38	124	10	172	<b>40</b>	<b>117</b>	61	<b>218</b>
+30 mins.	11	<b>282</b>	53	346	38	<b>120</b>	<b>16</b>	<b>174</b>	<b>46</b>	102	14	162	35	73	<b>73</b>	181
+45 mins.	10	218	54	282	<b>42</b>	93	8	143	34	97	8	139	37	80	64	181
Total Volume	38	1012	212	1262	134	403	41	578	154	461	48	663	147	328	255	730
% App. Total	3	80.2	16.8		23.2	69.7	7.1		23.2	69.5	7.2		20.1	44.9	34.9	
PHF	.731	.897	.869	.912	.798	.840	.641	.830	.837	.835	.750	.872	.919	.701	.873	.837



City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 33PLAKRORPM  
 Site Code : 22117718  
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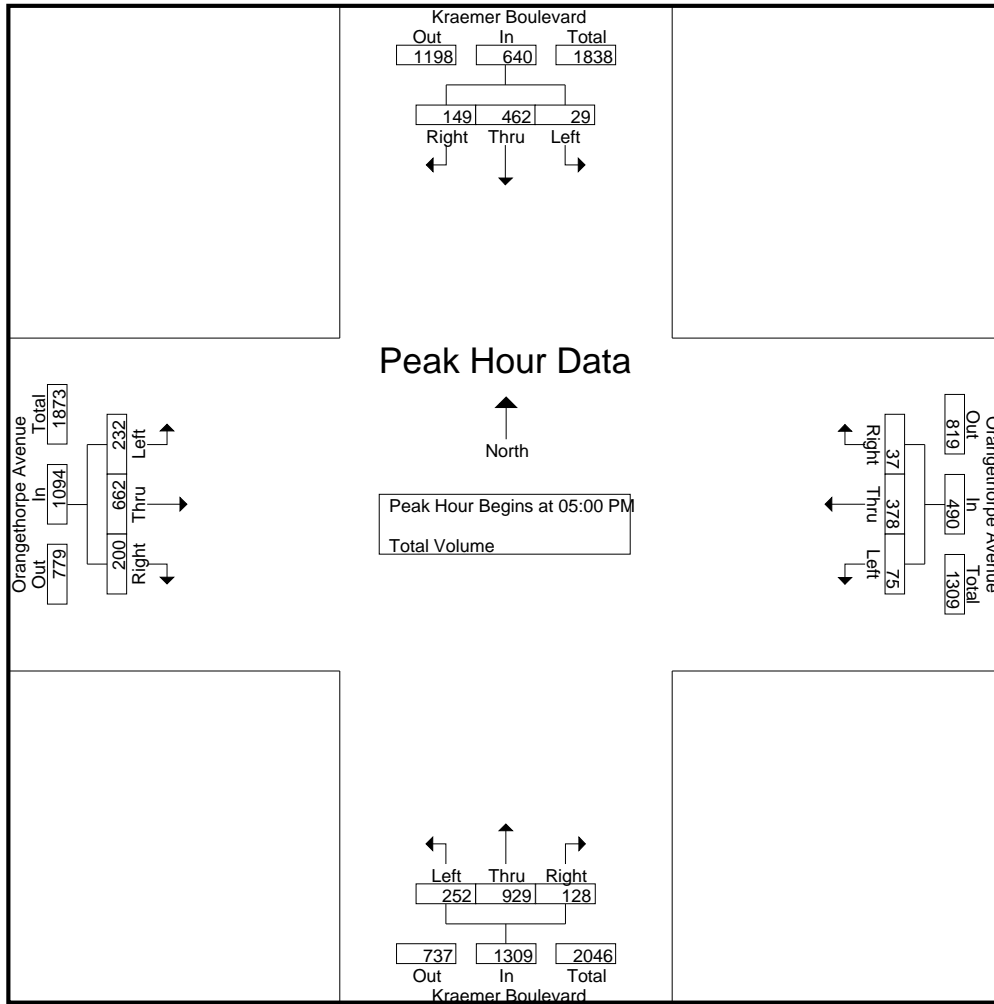
Groups Printed- Total Volume

Start Time	Kraemer Boulevard Southbound				Orangethorpe Avenue Westbound				Kraemer Boulevard Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	11	124	36	171	12	79	9	100	58	165	17	240	54	131	45	230	741
04:15 PM	11	136	51	198	11	69	13	93	61	167	27	255	56	141	38	235	781
04:30 PM	8	127	44	179	13	82	7	102	72	205	34	311	58	128	52	238	830
04:45 PM	13	105	34	152	26	87	8	121	63	191	25	279	39	160	47	246	798
Total	43	492	165	700	62	317	37	416	254	728	103	1085	207	560	182	949	3150
05:00 PM	9	127	47	183	21	105	12	138	49	225	38	312	62	165	51	278	911
05:15 PM	5	108	35	148	19	98	8	125	78	269	23	370	56	173	50	279	922
05:30 PM	8	120	39	167	14	80	7	101	62	228	39	329	54	162	47	263	860
05:45 PM	7	107	28	142	21	95	10	126	63	207	28	298	60	162	52	274	840
Total	29	462	149	640	75	378	37	490	252	929	128	1309	232	662	200	1094	3533
Grand Total	72	954	314	1340	137	695	74	906	506	1657	231	2394	439	1222	382	2043	6683
Apprch %	5.4	71.2	23.4		15.1	76.7	8.2		21.1	69.2	9.6		21.5	59.8	18.7		
Total %	1.1	14.3	4.7	20.1	2	10.4	1.1	13.6	7.6	24.8	3.5	35.8	6.6	18.3	5.7	30.6	

Start Time	Kraemer Boulevard Southbound				Orangethorpe Avenue Westbound				Kraemer Boulevard Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	<b>9</b>	<b>127</b>	<b>47</b>	<b>183</b>	<b>21</b>	<b>105</b>	<b>12</b>	<b>138</b>	49	225	38	312	<b>62</b>	165	51	278	911
05:15 PM	5	108	35	148	19	98	8	125	<b>78</b>	<b>269</b>	23	<b>370</b>	56	<b>173</b>	50	<b>279</b>	<b>922</b>
05:30 PM	8	120	39	167	14	80	7	101	62	228	<b>39</b>	329	54	162	47	263	860
05:45 PM	7	107	28	142	21	95	10	126	63	207	28	298	60	162	<b>52</b>	274	840
Total Volume	29	462	149	640	75	378	37	490	252	929	128	1309	232	662	200	1094	3533
% App. Total	4.5	72.2	23.3		15.3	77.1	7.6		19.3	71	9.8		21.2	60.5	18.3		
PHF	.806	.909	.793	.874	.893	.900	.771	.888	.808	.863	.821	.884	.935	.957	.962	.980	.958

City of Placentia  
 N/S: Kraemer Boulevard  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 33PLAKRORPM  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	11	136	51	198	21	105	12	138	49	225	38	312	62	165	51	278
+15 mins.	8	127	44	179	19	98	8	125	78	269	23	370	56	173	50	279
+30 mins.	13	105	34	152	14	80	7	101	62	228	39	329	54	162	47	263
+45 mins.	9	127	47	183	21	95	10	126	63	207	28	298	60	162	52	274
Total Volume	41	495	176	712	75	378	37	490	252	929	128	1309	232	662	200	1094
% App. Total	5.8	69.5	24.7		15.3	77.1	7.6		19.3	71	9.8		21.2	60.5	18.3	
PHF	.788	.910	.863	.899	.893	.900	.771	.888	.808	.863	.821	.884	.935	.957	.962	.980

City of Placentia  
 N/S: Crowther Avenue / Miller Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 34PLACRORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

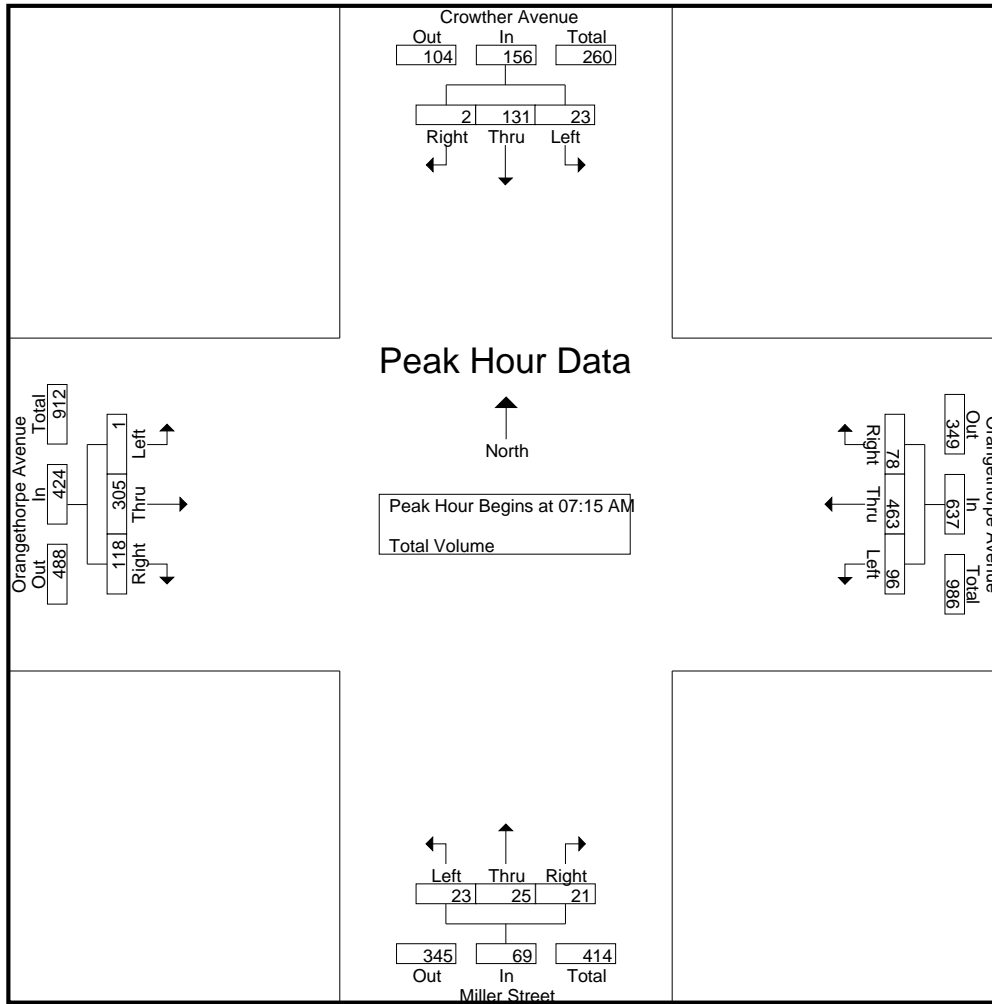
Groups Printed- Total Volume

Start Time	Crowther Avenue Southbound				Orangethorpe Avenue Westbound				Miller Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	16	0	19	22	75	9	106	0	4	3	7	0	38	17	55	187
07:15 AM	6	31	0	37	23	98	9	130	7	5	7	19	1	72	25	98	284
07:30 AM	9	33	0	42	20	111	23	154	3	8	2	13	0	69	23	92	301
07:45 AM	7	44	0	51	30	143	30	203	6	5	7	18	0	84	37	121	393
Total	25	124	0	149	95	427	71	593	16	22	19	57	1	263	102	366	1165
08:00 AM	1	23	2	26	23	111	16	150	7	7	5	19	0	80	33	113	308
08:15 AM	5	28	1	34	28	82	17	127	9	5	10	24	0	68	25	93	278
08:30 AM	13	15	1	29	14	73	12	99	6	7	7	20	0	64	13	77	225
08:45 AM	13	28	2	43	22	76	10	108	16	7	6	29	0	47	15	62	242
Total	32	94	6	132	87	342	55	484	38	26	28	92	0	259	86	345	1053
Grand Total	57	218	6	281	182	769	126	1077	54	48	47	149	1	522	188	711	2218
Apprch %	20.3	77.6	2.1		16.9	71.4	11.7		36.2	32.2	31.5		0.1	73.4	26.4		
Total %	2.6	9.8	0.3	12.7	8.2	34.7	5.7	48.6	2.4	2.2	2.1	6.7	0	23.5	8.5	32.1	

Start Time	Crowther Avenue Southbound				Orangethorpe Avenue Westbound				Miller Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	6	31	0	37	23	98	9	130	7	5	7	19	1	72	25	98	284
07:30 AM	9	33	0	42	20	111	23	154	3	8	2	13	0	69	23	92	301
07:45 AM	7	44	0	51	30	143	30	203	6	5	7	18	0	84	37	121	393
08:00 AM	1	23	2	26	23	111	16	150	7	7	5	19	0	80	33	113	308
Total Volume	23	131	2	156	96	463	78	637	23	25	21	69	1	305	118	424	1286
% App. Total	14.7	84	1.3		15.1	72.7	12.2		33.3	36.2	30.4		0.2	71.9	27.8		
PHF	.639	.744	.250	.765	.800	.809	.650	.784	.821	.781	.750	.908	.250	.908	.797	.876	.818

City of Placentia  
 N/S: Crowther Avenue / Miller Street  
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 Weather: Clear

File Name : 34PLACRORAM  
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				08:00 AM				07:15 AM			
+0 mins.	6	31	0	37	23	98	9	130	7	7	5	19	1	72	25	98
+15 mins.	9	33	0	42	20	111	23	154	9	5	10	24	0	69	23	92
+30 mins.	7	44	0	51	30	143	30	203	6	7	7	20	0	84	37	121
+45 mins.	1	23	2	26	23	111	16	150	16	7	6	29	0	80	33	113
Total Volume	23	131	2	156	96	463	78	637	38	26	28	92	1	305	118	424
% App. Total	14.7	84	1.3		15.1	72.7	12.2		41.3	28.3	30.4		0.2	71.9	27.8	
PHF	.639	.744	.250	.765	.800	.809	.650	.784	.594	.929	.700	.793	.250	.908	.797	.876

City of Placentia  
 N/S: Crowther Avenue / Miller Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 34PLACRORPM  
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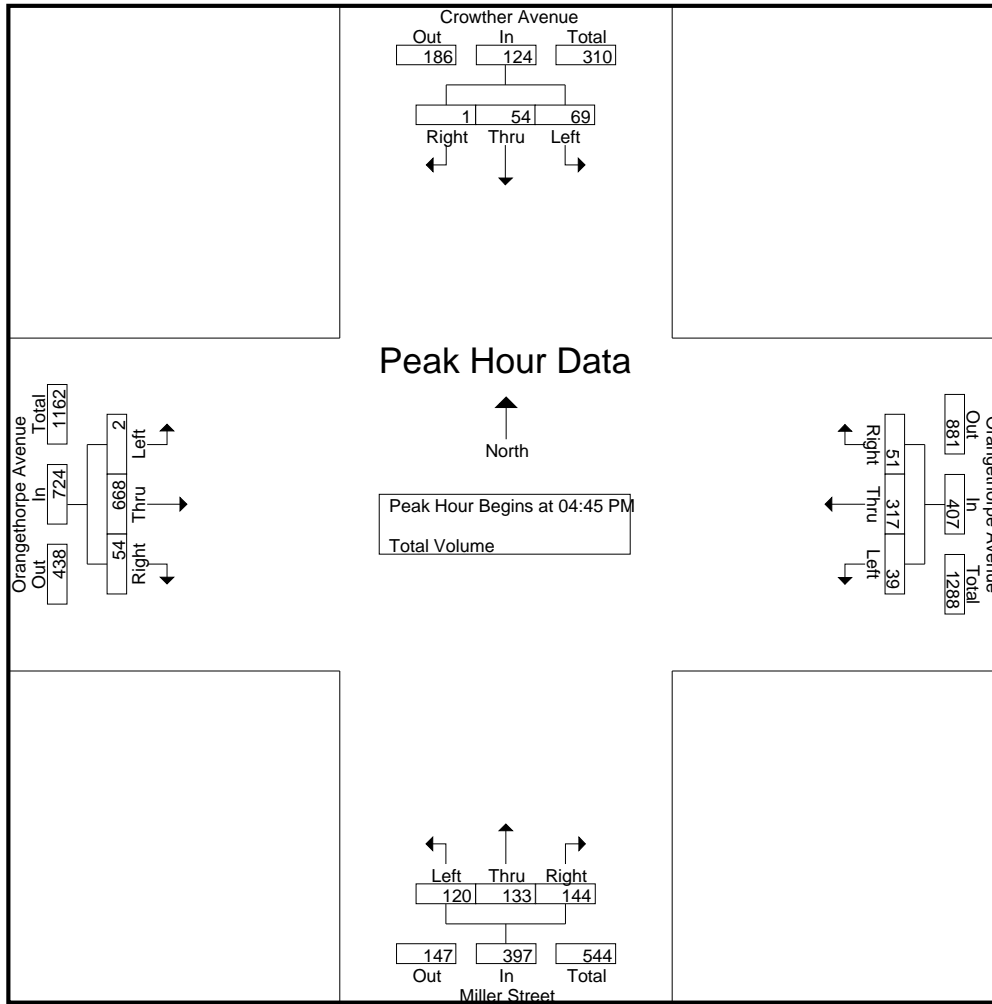
Groups Printed- Total Volume

Start Time	Crowther Avenue Southbound				Orangethorpe Avenue Westbound				Miller Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	19	9	1	29	5	57	13	75	28	35	21	84	0	121	26	147	335
04:15 PM	12	10	0	22	6	61	5	72	18	25	25	68	0	143	16	159	321
04:30 PM	20	11	1	32	9	67	15	91	26	34	35	95	0	144	12	156	374
04:45 PM	18	14	0	32	6	86	16	108	27	40	33	100	0	152	15	167	407
Total	69	44	2	115	26	271	49	346	99	134	114	347	0	560	69	629	1437
05:00 PM	21	12	1	34	11	75	16	102	48	32	45	125	1	172	7	180	441
05:15 PM	16	14	0	30	14	86	8	108	24	26	35	85	1	168	12	181	404
05:30 PM	14	14	0	28	8	70	11	89	21	35	31	87	0	176	20	196	400
05:45 PM	16	12	1	29	11	85	27	123	28	32	15	75	0	151	13	164	391
Total	67	52	2	121	44	316	62	422	121	125	126	372	2	667	52	721	1636
Grand Total	136	96	4	236	70	587	111	768	220	259	240	719	2	1227	121	1350	3073
Apprch %	57.6	40.7	1.7		9.1	76.4	14.5		30.6	36	33.4		0.1	90.9	9		
Total %	4.4	3.1	0.1	7.7	2.3	19.1	3.6	25	7.2	8.4	7.8	23.4	0.1	39.9	3.9	43.9	

Start Time	Crowther Avenue Southbound				Orangethorpe Avenue Westbound				Miller Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	18	14	0	32	6	86	16	108	27	40	33	100	0	152	15	167	407
05:00 PM	21	12	1	34	11	75	16	102	48	32	45	125	1	172	7	180	441
05:15 PM	16	14	0	30	14	86	8	108	24	26	35	85	1	168	12	181	404
05:30 PM	14	14	0	28	8	70	11	89	21	35	31	87	0	176	20	196	400
Total Volume	69	54	1	124	39	317	51	407	120	133	144	397	2	668	54	724	1652
% App. Total	55.6	43.5	0.8		9.6	77.9	12.5		30.2	33.5	36.3		0.3	92.3	7.5		
PHF	.821	.964	.250	.912	.696	.922	.797	.942	.625	.831	.800	.794	.500	.949	.675	.923	.937

City of Placentia  
 N/S: Crowther Avenue / Miller Street  
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 Weather: Clear

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 Start Date : 11/2/2017  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				04:30 PM				04:45 PM			
+0 mins.	20	11	1	32	11	75	16	102	26	34	35	95	0	152	15	167
+15 mins.	18	<b>14</b>	0	32	<b>14</b>	<b>86</b>	8	108	27	<b>40</b>	33	100	<b>1</b>	172	7	180
+30 mins.	<b>21</b>	12	1	<b>34</b>	8	70	11	89	<b>48</b>	32	<b>45</b>	<b>125</b>	1	168	12	181
+45 mins.	16	14	0	30	11	85	<b>27</b>	<b>123</b>	24	26	35	85	0	<b>176</b>	<b>20</b>	<b>196</b>
Total Volume	75	51	2	128	44	316	62	422	125	132	148	405	2	668	54	724
% App. Total	58.6	39.8	1.6		10.4	74.9	14.7		30.9	32.6	36.5		0.3	92.3	7.5	
PHF	.893	.911	.500	.941	.786	.919	.574	.858	.651	.825	.822	.810	.500	.949	.675	.923

City of Placentia  
 N/S: Chapman Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 35PLACHORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

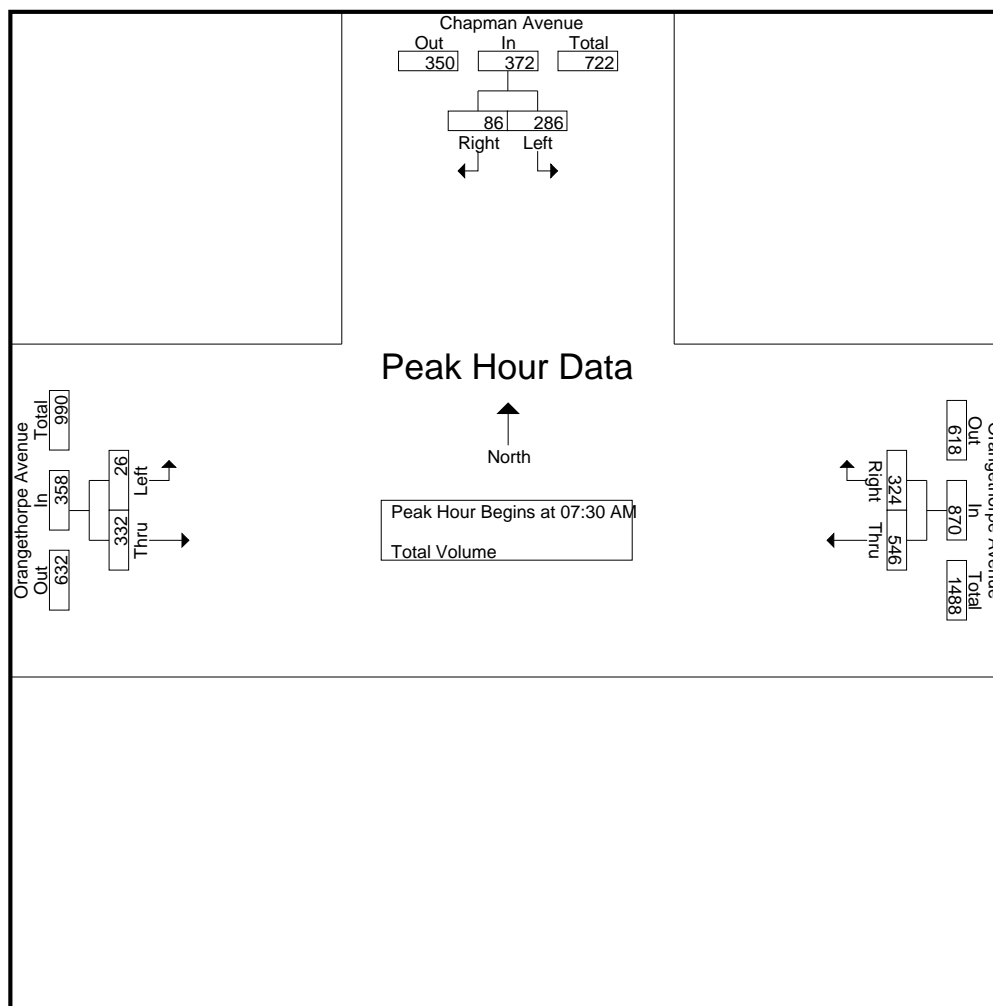
Start Time	Chapman Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	42	19	61	87	48	135	2	39	41	237
07:15 AM	61	16	77	110	72	182	2	69	71	330
07:30 AM	65	16	81	126	106	232	1	86	87	400
07:45 AM	84	19	103	198	80	278	5	98	103	484
Total	252	70	322	521	306	827	10	292	302	1451
08:00 AM	72	23	95	130	83	213	8	69	77	385
08:15 AM	65	28	93	92	55	147	12	79	91	331
08:30 AM	48	11	59	93	67	160	2	82	84	303
08:45 AM	52	14	66	88	42	130	2	70	72	268
Total	237	76	313	403	247	650	24	300	324	1287
Grand Total	489	146	635	924	553	1477	34	592	626	2738
Apprch %	77	23		62.6	37.4		5.4	94.6		
Total %	17.9	5.3	23.2	33.7	20.2	53.9	1.2	21.6	22.9	

Start Time	Chapman Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:30 AM	65	16	81	126	<b>106</b>	232	1	86	87	400
07:45 AM	<b>84</b>	19	<b>103</b>	<b>198</b>	80	<b>278</b>	5	<b>98</b>	<b>103</b>	<b>484</b>
08:00 AM	72	23	95	130	83	213	8	69	77	385
08:15 AM	65	<b>28</b>	93	92	55	147	<b>12</b>	79	91	331
Total Volume	286	86	372	546	324	870	26	332	358	1600
% App. Total	76.9	23.1		62.8	37.2		7.3	92.7		
PHF	.851	.768	.903	.689	.764	.782	.542	.847	.869	.826

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:30 AM

City of Placentia  
 N/S: Chapman Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 35PLACHORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:15 AM			07:30 AM		
+0 mins.	65	16	81	110	72	182	1	86	87
+15 mins.	<b>84</b>	19	<b>103</b>	126	<b>106</b>	232	5	<b>98</b>	<b>103</b>
+30 mins.	72	23	95	<b>198</b>	80	<b>278</b>	8	69	77
+45 mins.	65	<b>28</b>	93	130	83	213	<b>12</b>	79	91
Total Volume	286	86	372	564	341	905	26	332	358
% App. Total	76.9	23.1		62.3	37.7		7.3	92.7	
PHF	.851	.768	.903	.712	.804	.814	.542	.847	.869



City of Placentia  
 N/S: Chapman Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 35PLACHORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

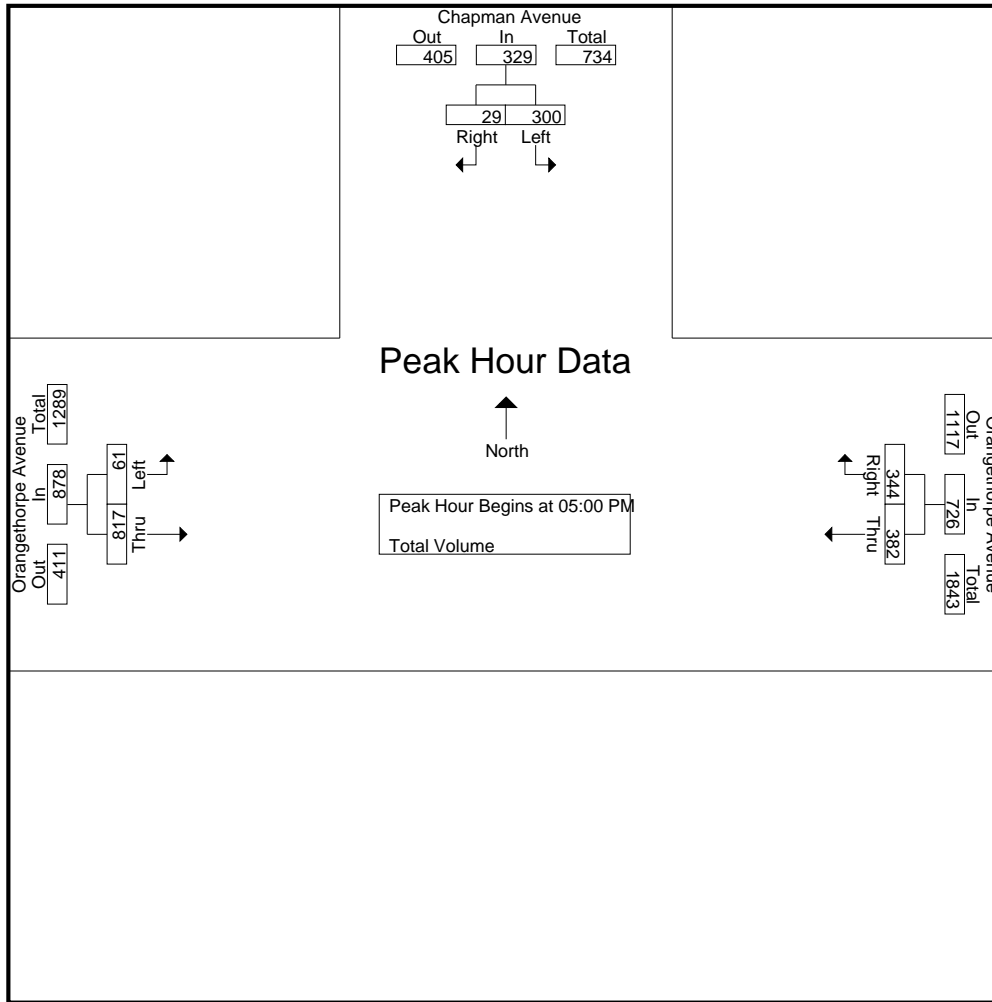
Start Time	Chapman Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	70	9	79	67	69	136	9	150	159	374
04:15 PM	68	6	74	65	77	142	17	174	191	407
04:30 PM	67	11	78	87	55	142	9	179	188	408
04:45 PM	70	6	76	100	69	169	16	193	209	454
Total	275	32	307	319	270	589	51	696	747	1643
05:00 PM	73	3	76	102	80	182	21	223	244	502
05:15 PM	57	11	68	97	112	209	13	220	233	510
05:30 PM	71	6	77	86	86	172	16	184	200	449
05:45 PM	99	9	108	97	66	163	11	190	201	472
Total	300	29	329	382	344	726	61	817	878	1933
Grand Total	575	61	636	701	614	1315	112	1513	1625	3576
Apprch %	90.4	9.6		53.3	46.7		6.9	93.1		
Total %	16.1	1.7	17.8	19.6	17.2	36.8	3.1	42.3	45.4	

Start Time	Chapman Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
05:00 PM	73	3	76	<b>102</b>	80	182	<b>21</b>	<b>223</b>	<b>244</b>	502
05:15 PM	57	11	68	97	<b>112</b>	<b>209</b>	13	220	233	<b>510</b>
05:30 PM	71	6	77	86	86	172	16	184	200	449
05:45 PM	<b>99</b>	9	<b>108</b>	97	66	163	11	190	201	472
Total Volume	300	29	329	382	344	726	61	817	878	1933
% App. Total	91.2	8.8		52.6	47.4		6.9	93.1		
PHF	.758	.659	.762	.936	.768	.868	.726	.916	.900	.948

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 05:00 PM

City of Placentia  
 N/S: Chapman Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 35PLACHORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 PM			04:45 PM		
+0 mins.	73	3	76	100	69	169	16	193	209
+15 mins.	57	<b>11</b>	68	<b>102</b>	80	182	<b>21</b>	<b>223</b>	<b>244</b>
+30 mins.	71	6	77	97	<b>112</b>	<b>209</b>	13	220	233
+45 mins.	<b>99</b>	9	<b>108</b>	86	86	172	16	184	200
Total Volume	300	29	329	385	347	732	66	820	886
% App. Total	91.2	8.8		52.6	47.4		7.4	92.6	
PHF	.758	.659	.762	.944	.775	.876	.786	.919	.908

City of Placentia  
 N/S: Rose Drive  
 E/W: Del Cerro Drive  
 Weather: Clear

File Name : 36PLARODCAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

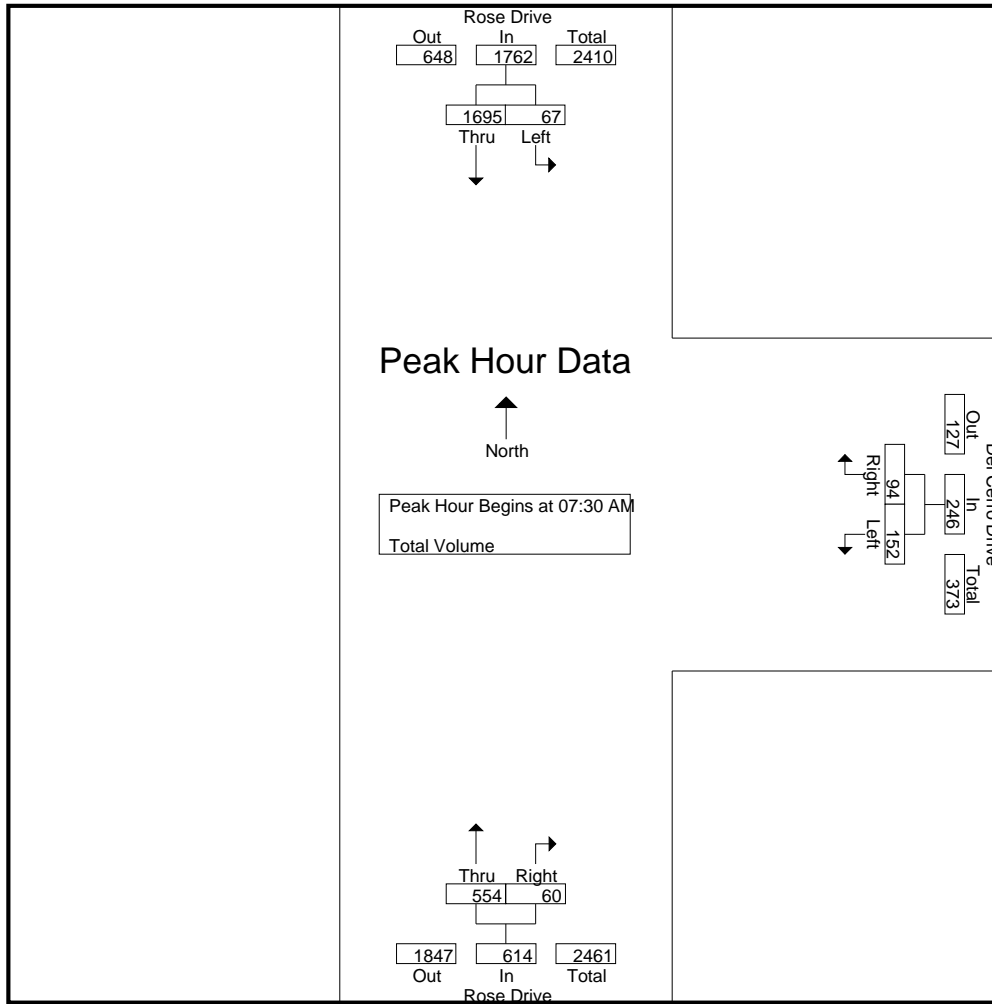
Start Time	Rose Drive Southbound			Del Cerro Drive Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	11	396	407	35	9	44	83	16	99	550
07:15 AM	17	361	378	36	21	57	101	13	114	549
07:30 AM	18	423	441	31	31	62	132	17	149	652
07:45 AM	27	488	515	38	22	60	156	9	165	740
Total	73	1668	1741	140	83	223	472	55	527	2491
08:00 AM	12	416	428	47	22	69	123	21	144	641
08:15 AM	10	368	378	36	19	55	143	13	156	589
08:30 AM	17	361	378	49	18	67	147	17	164	609
08:45 AM	12	315	327	36	23	59	141	13	154	540
Total	51	1460	1511	168	82	250	554	64	618	2379
Grand Total	124	3128	3252	308	165	473	1026	119	1145	4870
Apprch %	3.8	96.2		65.1	34.9		89.6	10.4		
Total %	2.5	64.2	66.8	6.3	3.4	9.7	21.1	2.4	23.5	

Start Time	Rose Drive Southbound			Del Cerro Drive Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:30 AM	18	423	441	31	<b>31</b>	62	132	17	149	652
07:45 AM	<b>27</b>	<b>488</b>	<b>515</b>	38	22	60	<b>156</b>	9	<b>165</b>	<b>740</b>
08:00 AM	12	416	428	<b>47</b>	22	<b>69</b>	123	<b>21</b>	144	641
08:15 AM	10	368	378	36	19	55	143	13	156	589
Total Volume	67	1695	1762	152	94	246	554	60	614	2622
% App. Total	3.8	96.2		61.8	38.2		90.2	9.8		
PHF	.620	.868	.855	.809	.758	.891	.888	.714	.930	.886

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:30 AM

City of Placentia  
 N/S: Rose Drive  
 E/W: Del Cerro Drive  
 Weather: Clear

File Name : 36PLARODCAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:45 AM			07:45 AM		
+0 mins.	17	361	378	38	<b>22</b>	60	<b>156</b>	9	<b>165</b>
+15 mins.	18	423	441	47	22	<b>69</b>	123	<b>21</b>	144
+30 mins.	<b>27</b>	<b>488</b>	<b>515</b>	36	19	55	143	13	156
+45 mins.	12	416	428	<b>49</b>	18	67	147	17	164
Total Volume	74	1688	1762	170	81	251	569	60	629
% App. Total	4.2	95.8		67.7	32.3		90.5	9.5	
PHF	.685	.865	.855	.867	.920	.909	.912	.714	.953

City of Placentia  
 N/S: Rose Drive  
 E/W: Del Cerro Drive  
 Weather: Clear

File Name : 36PLARODCPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

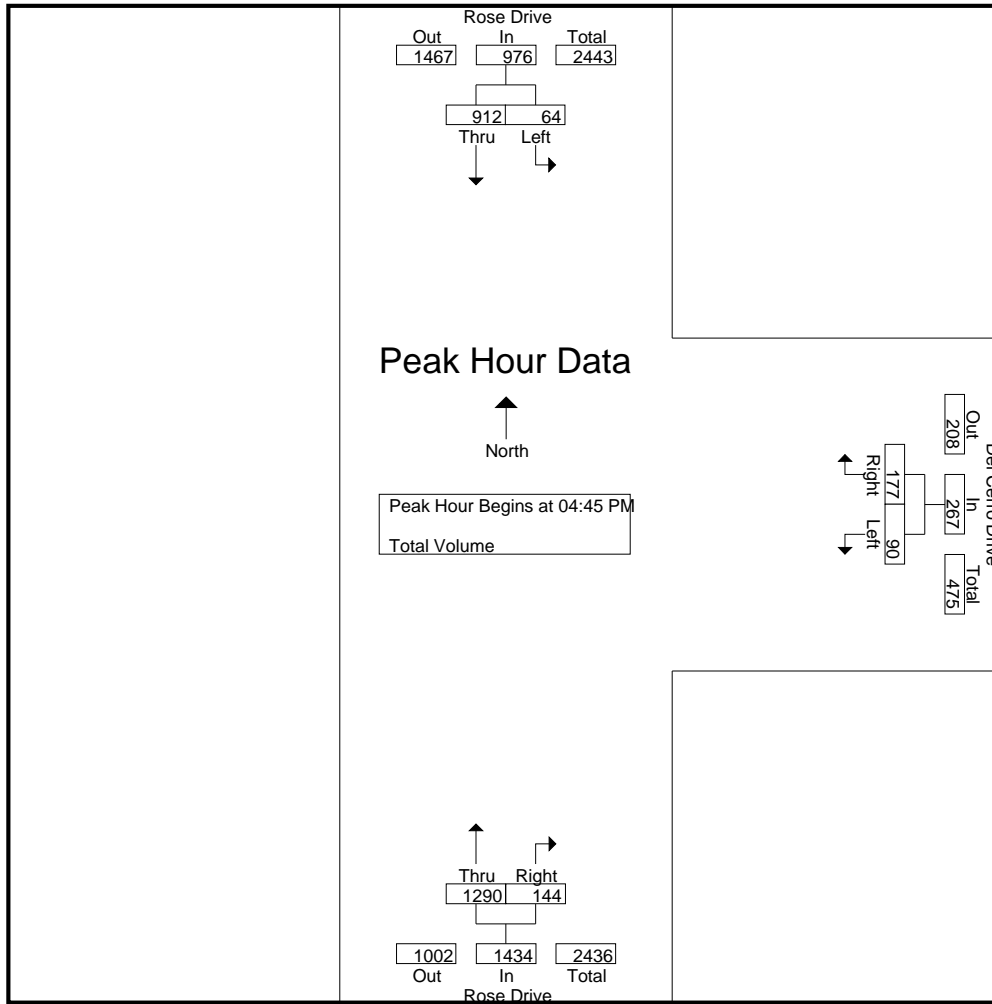
Start Time	Rose Drive Southbound			Del Cerro Drive Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	22	219	241	7	39	46	252	20	272	559
04:15 PM	17	252	269	32	32	64	291	25	316	649
04:30 PM	21	222	243	29	40	69	255	35	290	602
04:45 PM	10	251	261	18	33	51	350	33	383	695
Total	70	944	1014	86	144	230	1148	113	1261	2505
05:00 PM	18	229	247	32	56	88	328	36	364	699
05:15 PM	21	235	256	26	54	80	288	44	332	668
05:30 PM	15	197	212	14	34	48	324	31	355	615
05:45 PM	24	212	236	19	40	59	318	30	348	643
Total	78	873	951	91	184	275	1258	141	1399	2625
Grand Total	148	1817	1965	177	328	505	2406	254	2660	5130
Apprch %	7.5	92.5		35	65		90.5	9.5		
Total %	2.9	35.4	38.3	3.5	6.4	9.8	46.9	5	51.9	

Start Time	Rose Drive Southbound			Del Cerro Drive Westbound			Rose Drive Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:45 PM	10	<b>251</b>	<b>261</b>	18	33	51	<b>350</b>	33	<b>383</b>	695
05:00 PM	18	229	247	<b>32</b>	<b>56</b>	<b>88</b>	328	36	364	<b>699</b>
05:15 PM	<b>21</b>	235	256	26	54	80	288	<b>44</b>	332	668
05:30 PM	15	197	212	14	34	48	324	31	355	615
Total Volume	64	912	976	90	177	267	1290	144	1434	2677
% App. Total	6.6	93.4		33.7	66.3		90	10		
PHF	.762	.908	.935	.703	.790	.759	.921	.818	.936	.957

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Placentia  
 N/S: Rose Drive  
 E/W: Del Cerro Drive  
 Weather: Clear

File Name : 36PLARODCPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM			04:30 PM			04:45 PM		
+0 mins.	17	<b>252</b>	<b>269</b>	29	40	69	<b>350</b>	33	<b>383</b>
+15 mins.	<b>21</b>	222	243	18	33	51	328	36	364
+30 mins.	10	251	261	<b>32</b>	<b>56</b>	<b>88</b>	288	<b>44</b>	332
+45 mins.	18	229	247	26	54	80	324	31	355
Total Volume	66	954	1020	105	183	288	1290	144	1434
% App. Total	6.5	93.5		36.5	63.5		90	10	
PHF	.786	.946	.948	.820	.817	.818	.921	.818	.936

City of Placentia  
 N/S: Jefferson Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 37PLAJEORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

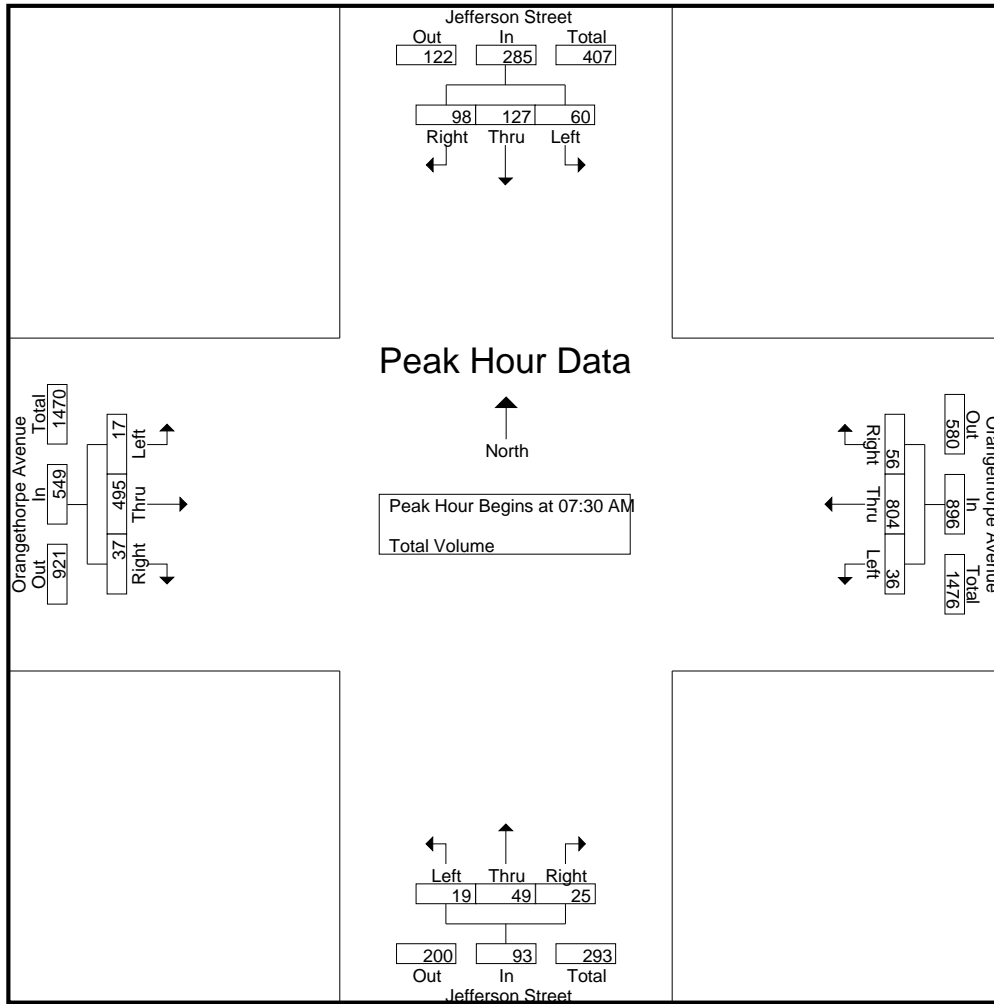
Groups Printed- Total Volume

Start Time	Jefferson Street Southbound				Orangethorpe Avenue Westbound				Jefferson Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	4	39	40	83	7	111	6	124	3	9	10	22	1	78	7	86	315
07:15 AM	6	25	19	50	8	161	13	182	1	5	8	14	6	101	9	116	362
07:30 AM	19	31	32	82	7	213	15	235	8	13	5	26	3	125	7	135	478
07:45 AM	14	31	26	71	5	260	15	280	3	7	2	12	0	148	12	160	523
Total	43	126	117	286	27	745	49	821	15	34	25	74	10	452	35	497	1678
08:00 AM	15	35	20	70	17	185	16	218	4	21	7	32	5	107	12	124	444
08:15 AM	12	30	20	62	7	146	10	163	4	8	11	23	9	115	6	130	378
08:30 AM	9	20	20	49	5	155	7	167	5	11	2	18	3	101	9	113	347
08:45 AM	5	26	14	45	5	124	14	143	8	11	4	23	5	87	11	103	314
Total	41	111	74	226	34	610	47	691	21	51	24	96	22	410	38	470	1483
Grand Total	84	237	191	512	61	1355	96	1512	36	85	49	170	32	862	73	967	3161
Apprch %	16.4	46.3	37.3		4	89.6	6.3		21.2	50	28.8		3.3	89.1	7.5		
Total %	2.7	7.5	6	16.2	1.9	42.9	3	47.8	1.1	2.7	1.6	5.4	1	27.3	2.3	30.6	

Start Time	Jefferson Street Southbound				Orangethorpe Avenue Westbound				Jefferson Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	19	31	32	82	7	213	15	235	8	13	5	26	3	125	7	135	478
07:45 AM	14	31	26	71	5	260	15	280	3	7	2	12	0	148	12	160	523
08:00 AM	15	35	20	70	17	185	16	218	4	21	7	32	5	107	12	124	444
08:15 AM	12	30	20	62	7	146	10	163	4	8	11	23	9	115	6	130	378
Total Volume	60	127	98	285	36	804	56	896	19	49	25	93	17	495	37	549	1823
% App. Total	21.1	44.6	34.4		4	89.7	6.2		20.4	52.7	26.9		3.1	90.2	6.7		
PHF	.789	.907	.766	.869	.529	.773	.875	.800	.594	.583	.568	.727	.472	.836	.771	.858	.871

City of Placentia  
 N/S: Jefferson Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 37PLAJEORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				08:00 AM				07:30 AM			
+0 mins.	4	<b>39</b>	<b>40</b>	<b>83</b>	8	161	13	182	4	<b>21</b>	7	<b>32</b>	3	125	7	135
+15 mins.	6	25	19	50	7	213	15	235	4	8	<b>11</b>	23	0	<b>148</b>	<b>12</b>	<b>160</b>
+30 mins.	<b>19</b>	31	32	82	5	<b>260</b>	15	<b>280</b>	5	11	2	18	5	107	12	124
+45 mins.	14	31	26	71	<b>17</b>	185	<b>16</b>	218	<b>8</b>	11	4	23	<b>9</b>	115	6	130
Total Volume	43	126	117	286	37	819	59	915	21	51	24	96	17	495	37	549
% App. Total	15	44.1	40.9		4	89.5	6.4		21.9	53.1	25		3.1	90.2	6.7	
PHF	.566	.808	.731	.861	.544	.788	.922	.817	.656	.607	.545	.750	.472	.836	.771	.858



City of Placentia  
 N/S: Jefferson Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 37PLAJEORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

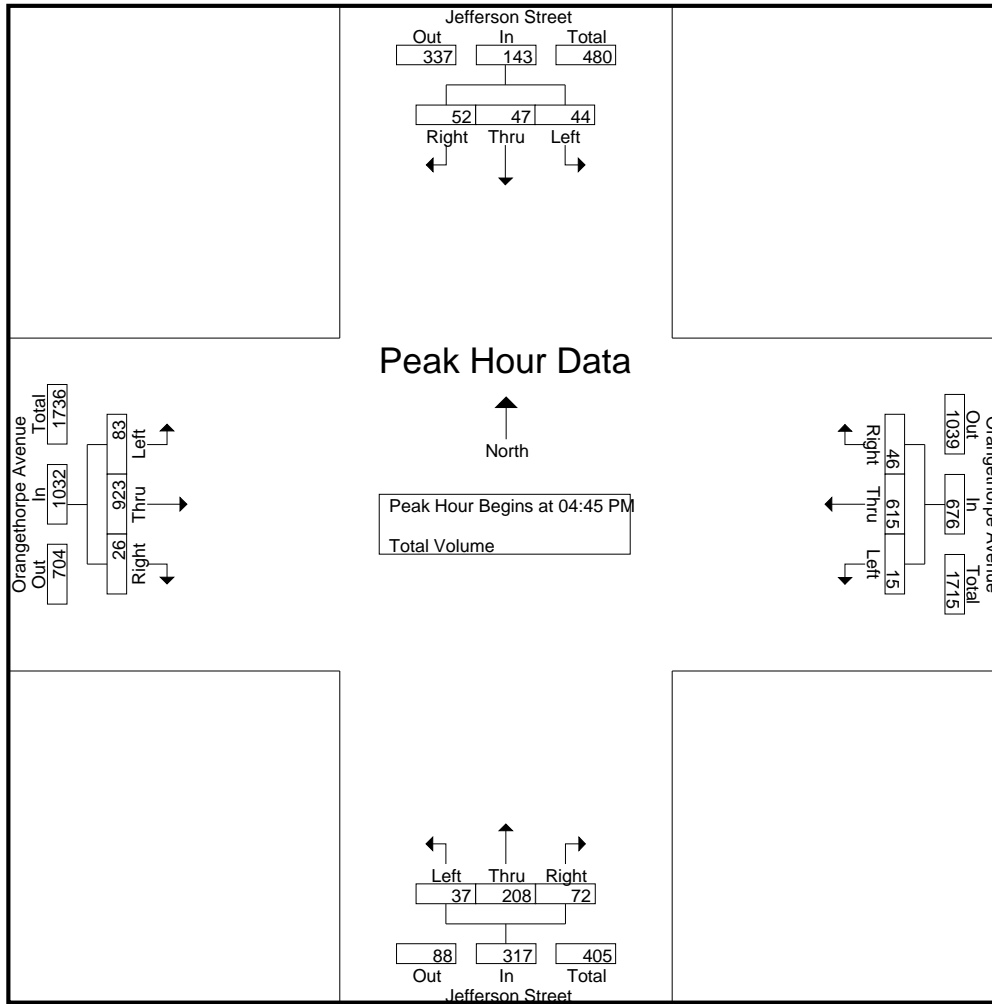
Groups Printed- Total Volume

Start Time	Jefferson Street Southbound				Orangethorpe Avenue Westbound				Jefferson Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	13	10	8	31	3	131	15	149	4	41	13	58	14	192	6	212	450
04:15 PM	2	9	10	21	8	136	13	157	7	34	7	48	22	192	7	221	447
04:30 PM	12	12	9	33	1	120	18	139	6	51	27	84	11	209	5	225	481
04:45 PM	11	9	12	32	8	143	16	167	7	43	14	64	18	240	8	266	529
Total	38	40	39	117	20	530	62	612	24	169	61	254	65	833	26	924	1907
05:00 PM	8	14	17	39	1	171	11	183	8	55	22	85	17	240	10	267	574
05:15 PM	14	12	12	38	4	144	14	162	14	42	21	77	29	220	3	252	529
05:30 PM	11	12	11	34	2	157	5	164	8	68	15	91	19	223	5	247	536
05:45 PM	11	9	11	31	3	142	19	164	5	46	16	67	21	237	5	263	525
Total	44	47	51	142	10	614	49	673	35	211	74	320	86	920	23	1029	2164
Grand Total	82	87	90	259	30	1144	111	1285	59	380	135	574	151	1753	49	1953	4071
Apprch %	31.7	33.6	34.7		2.3	89	8.6		10.3	66.2	23.5		7.7	89.8	2.5		
Total %	2	2.1	2.2	6.4	0.7	28.1	2.7	31.6	1.4	9.3	3.3	14.1	3.7	43.1	1.2	48	

Start Time	Jefferson Street Southbound				Orangethorpe Avenue Westbound				Jefferson Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	11	9	12	32	8	143	16	167	7	43	14	64	18	240	8	266	529
05:00 PM	8	14	17	39	1	171	11	183	8	55	22	85	17	240	10	267	574
05:15 PM	14	12	12	38	4	144	14	162	14	42	21	77	29	220	3	252	529
05:30 PM	11	12	11	34	2	157	5	164	8	68	15	91	19	223	5	247	536
Total Volume	44	47	52	143	15	615	46	676	37	208	72	317	83	923	26	1032	2168
% App. Total	30.8	32.9	36.4		2.2	91	6.8		11.7	65.6	22.7		8	89.4	2.5		
PHF	.786	.839	.765	.917	.469	.899	.719	.923	.661	.765	.818	.871	.716	.961	.650	.966	.944

City of Placentia  
 N/S: Jefferson Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 37PLAJEORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				05:00 PM				04:45 PM			
+0 mins.	11	9	12	32	<b>8</b>	143	<b>16</b>	167	8	55	<b>22</b>	85	18	<b>240</b>	8	266
+15 mins.	8	<b>14</b>	<b>17</b>	<b>39</b>	1	<b>171</b>	11	<b>183</b>	<b>14</b>	42	21	77	17	240	<b>10</b>	<b>267</b>
+30 mins.	<b>14</b>	12	12	38	4	144	14	162	8	<b>68</b>	15	<b>91</b>	<b>29</b>	220	3	252
+45 mins.	11	12	11	34	2	157	5	164	5	46	16	67	19	223	5	247
Total Volume	44	47	52	143	15	615	46	676	35	211	74	320	83	923	26	1032
% App. Total	30.8	32.9	36.4		2.2	91	6.8		10.9	65.9	23.1		8	89.4	2.5	
PHF	.786	.839	.765	.917	.469	.899	.719	.923	.625	.776	.841	.879	.716	.961	.650	.966

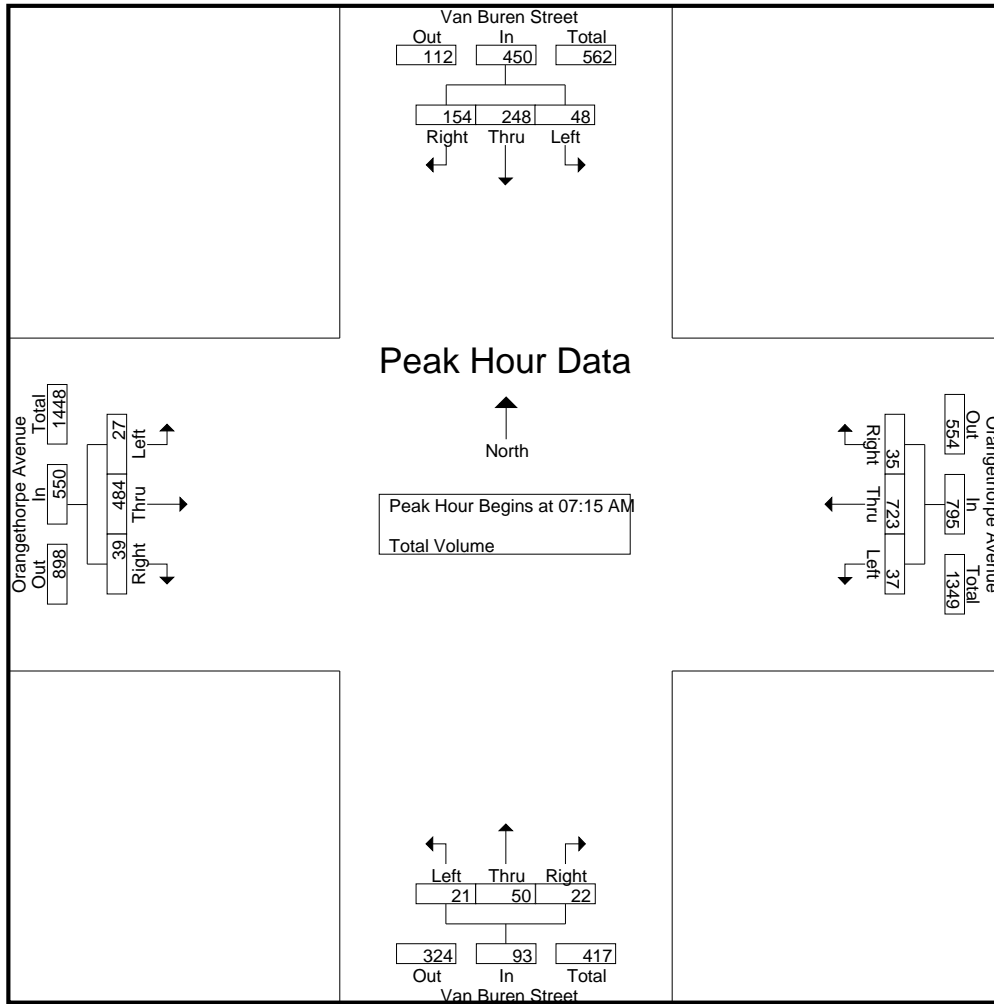
City of Placentia  
 N/S: Van Buren Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 38PLAVBORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	6	36	29	71	3	102	7	112	1	10	3	14	10	67	11	88	285
07:15 AM	4	75	42	121	11	122	5	138	8	11	6	25	2	97	10	109	393
07:30 AM	17	53	37	107	4	205	5	214	5	15	11	31	9	130	6	145	497
07:45 AM	17	59	39	115	12	222	9	243	3	9	2	14	3	155	13	171	543
Total	44	223	147	414	30	651	26	707	17	45	22	84	24	449	40	513	1718
08:00 AM	10	61	36	107	10	174	16	200	5	15	3	23	13	102	10	125	455
08:15 AM	11	49	25	85	3	129	3	135	6	14	4	24	11	119	9	139	383
08:30 AM	12	26	42	80	6	120	6	132	2	10	6	18	9	95	12	116	346
08:45 AM	12	36	14	62	9	126	7	142	5	8	9	22	11	85	6	102	328
Total	45	172	117	334	28	549	32	609	18	47	22	87	44	401	37	482	1512
Grand Total	89	395	264	748	58	1200	58	1316	35	92	44	171	68	850	77	995	3230
Apprch %	11.9	52.8	35.3		4.4	91.2	4.4		20.5	53.8	25.7		6.8	85.4	7.7		
Total %	2.8	12.2	8.2	23.2	1.8	37.2	1.8	40.7	1.1	2.8	1.4	5.3	2.1	26.3	2.4	30.8	

Start Time	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	<b>75</b>	<b>42</b>	<b>121</b>	11	122	5	138	<b>8</b>	11	6	25	2	97	10	109	393
07:30 AM	<b>17</b>	53	37	107	4	205	5	214	5	<b>15</b>	<b>11</b>	<b>31</b>	9	130	6	145	497
07:45 AM	17	59	39	115	<b>12</b>	<b>222</b>	9	<b>243</b>	3	9	2	14	3	<b>155</b>	<b>13</b>	<b>171</b>	<b>543</b>
08:00 AM	10	61	36	107	10	174	<b>16</b>	200	5	15	3	23	<b>13</b>	102	10	125	455
Total Volume	48	248	154	450	37	723	35	795	21	50	22	93	27	484	39	550	1888
% App. Total	10.7	55.1	34.2		4.7	90.9	4.4		22.6	53.8	23.7		4.9	88	7.1		
PHF	.706	.827	.917	.930	.771	.814	.547	.818	.656	.833	.500	.750	.519	.781	.750	.804	.869



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:30 AM			
+0 mins.	4	75	42	121	11	122	5	138	8	11	6	25	9	130	6	145
+15 mins.	17	53	37	107	4	205	5	214	5	15	11	31	3	155	13	171
+30 mins.	17	59	39	115	12	222	9	243	3	9	2	14	13	102	10	125
+45 mins.	10	61	36	107	10	174	16	200	5	15	3	23	11	119	9	139
Total Volume	48	248	154	450	37	723	35	795	21	50	22	93	36	506	38	580
% App. Total	10.7	55.1	34.2		4.7	90.9	4.4		22.6	53.8	23.7		6.2	87.2	6.6	
PHF	.706	.827	.917	.930	.771	.814	.547	.818	.656	.833	.500	.750	.692	.816	.731	.848

City of Placentia  
 N/S: Van Buren Street  
 E/W: Orangethorpe Avenue  
 Weather: Clear

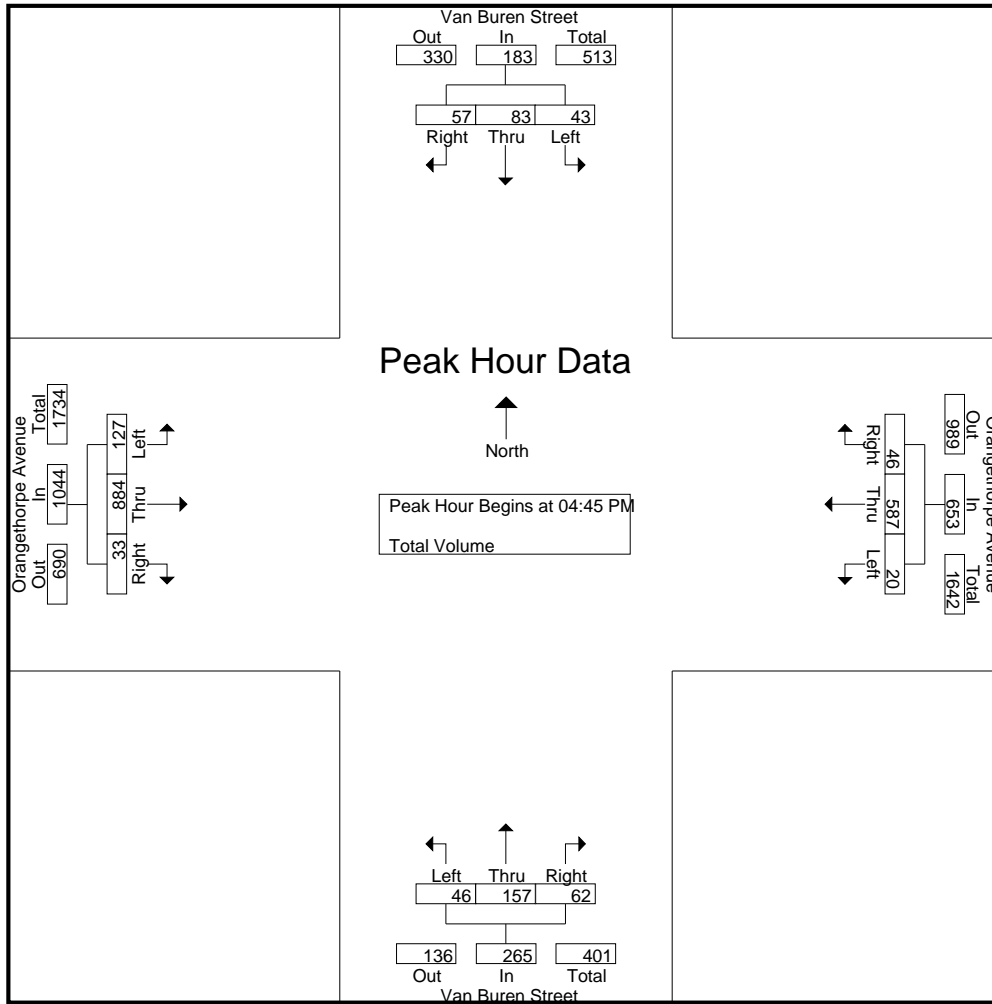
File Name : 38PLAVBORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	14	18	15	47	5	129	12	146	11	37	5	53	24	156	18	198	444
04:15 PM	7	24	22	53	5	118	7	130	8	41	17	66	22	186	8	216	465
04:30 PM	12	23	12	47	4	113	17	134	15	44	15	74	31	190	12	233	488
04:45 PM	9	23	15	47	5	137	13	155	12	34	12	58	28	233	8	269	529
Total	42	88	64	194	19	497	49	565	46	156	49	251	105	765	46	916	1926
05:00 PM	14	21	13	48	2	158	12	172	14	48	11	73	41	204	5	250	543
05:15 PM	11	19	16	46	3	148	12	163	9	40	24	73	33	231	13	277	559
05:30 PM	9	20	13	42	10	144	9	163	11	35	15	61	25	216	7	248	514
05:45 PM	9	26	19	54	4	125	11	140	6	34	13	53	37	198	16	251	498
Total	43	86	61	190	19	575	44	638	40	157	63	260	136	849	41	1026	2114
Grand Total	85	174	125	384	38	1072	93	1203	86	313	112	511	241	1614	87	1942	4040
Apprch %	22.1	45.3	32.6		3.2	89.1	7.7		16.8	61.3	21.9		12.4	83.1	4.5		
Total %	2.1	4.3	3.1	9.5	0.9	26.5	2.3	29.8	2.1	7.7	2.8	12.6	6	40	2.2	48.1	

Start Time	Van Buren Street Southbound				Orangethorpe Avenue Westbound				Van Buren Street Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:45 PM	9	23	15	47	5	137	13	155	12	34	12	58	28	233	8	269	529
05:00 PM	14	21	13	48	2	158	12	172	14	48	11	73	41	204	5	250	543
05:15 PM	11	19	16	46	3	148	12	163	9	40	24	73	33	231	13	277	559
05:30 PM	9	20	13	42	10	144	9	163	11	35	15	61	25	216	7	248	514
Total Volume	43	83	57	183	20	587	46	653	46	157	62	265	127	884	33	1044	2145
% App. Total	23.5	45.4	31.1		3.1	89.9	7		17.4	59.2	23.4		12.2	84.7	3.2		
PHF	.768	.902	.891	.953	.500	.929	.885	.949	.821	.818	.646	.908	.774	.948	.635	.942	.959

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:45 PM



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				04:30 PM				04:45 PM			
+0 mins.	7	<b>24</b>	<b>22</b>	<b>53</b>	5	137	<b>13</b>	155	<b>15</b>	44	15	<b>74</b>	28	<b>233</b>	8	269
+15 mins.	12	23	12	47	2	<b>158</b>	12	<b>172</b>	12	34	12	58	<b>41</b>	204	5	250
+30 mins.	9	23	15	47	3	148	12	163	14	<b>48</b>	11	73	33	231	<b>13</b>	<b>277</b>
+45 mins.	<b>14</b>	21	13	48	<b>10</b>	144	9	163	9	40	<b>24</b>	73	25	216	7	248
Total Volume	42	91	62	195	20	587	46	653	50	166	62	278	127	884	33	1044
% App. Total	21.5	46.7	31.8		3.1	89.9	7		18	59.7	22.3		12.2	84.7	3.2	
PHF	.750	.948	.705	.920	.500	.929	.885	.949	.833	.865	.646	.939	.774	.948	.635	.942

City of Placentia  
 N/S: Richfield Road  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 39PLARIORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

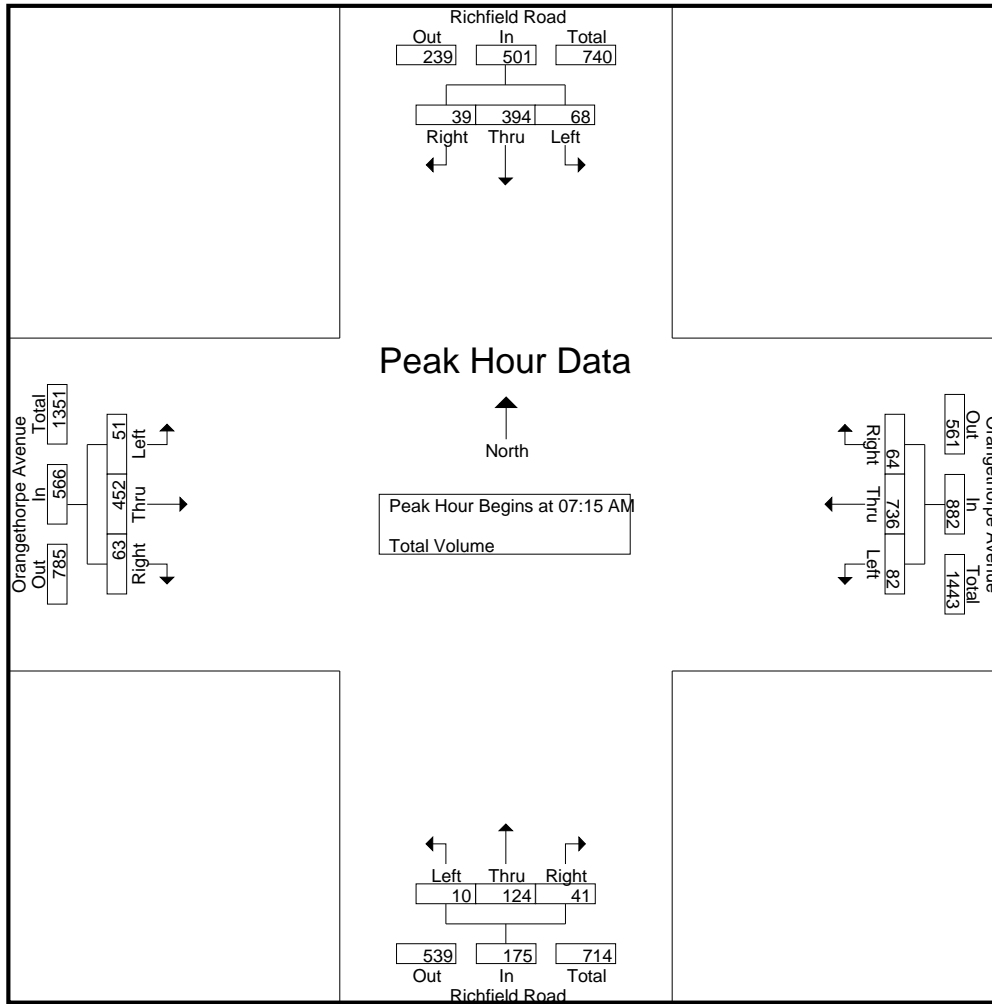
Groups Printed- Total Volume

Start Time	Richfield Road Southbound				Orangethorpe Avenue Westbound				Richfield Road Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	7	81	2	90	17	104	8	129	0	25	3	28	10	56	12	78	325
07:15 AM	9	102	4	115	19	122	8	149	4	21	5	30	15	81	14	110	404
07:30 AM	22	94	11	127	18	214	17	249	3	36	17	56	18	129	12	159	591
07:45 AM	23	104	11	138	23	218	23	264	2	26	10	38	11	132	20	163	603
Total	61	381	28	470	77	658	56	791	9	108	35	152	54	398	58	510	1923
08:00 AM	14	94	13	121	22	182	16	220	1	41	9	51	7	110	17	134	526
08:15 AM	9	54	11	74	18	116	10	144	4	27	7	38	19	92	22	133	389
08:30 AM	14	44	7	65	15	119	5	139	2	23	0	25	8	94	12	114	343
08:45 AM	12	74	16	102	16	108	16	140	6	37	7	50	8	72	15	95	387
Total	49	266	47	362	71	525	47	643	13	128	23	164	42	368	66	476	1645
Grand Total	110	647	75	832	148	1183	103	1434	22	236	58	316	96	766	124	986	3568
Apprch %	13.2	77.8	9		10.3	82.5	7.2		7	74.7	18.4		9.7	77.7	12.6		
Total %	3.1	18.1	2.1	23.3	4.1	33.2	2.9	40.2	0.6	6.6	1.6	8.9	2.7	21.5	3.5	27.6	

Start Time	Richfield Road Southbound				Orangethorpe Avenue Westbound				Richfield Road Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	9	102	4	115	19	122	8	149	4	21	5	30	15	81	14	110	404
07:30 AM	22	94	11	127	18	214	17	249	3	36	17	56	18	129	12	159	591
07:45 AM	23	104	11	138	23	218	23	264	2	26	10	38	11	132	20	163	603
08:00 AM	14	94	13	121	22	182	16	220	1	41	9	51	7	110	17	134	526
Total Volume	68	394	39	501	82	736	64	882	10	124	41	175	51	452	63	566	2124
% App. Total	13.6	78.6	7.8		9.3	83.4	7.3		5.7	70.9	23.4		9	79.9	11.1		
PHF	.739	.947	.750	.908	.891	.844	.696	.835	.625	.756	.603	.781	.708	.856	.788	.868	.881

City of Placentia  
 N/S: Richfield Road  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 39PLARIORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:45 AM				08:00 AM			
+0 mins.	9	102	4	115	19	122	8	149	3	36	17	56	18	129	12	159
+15 mins.	22	94	11	127	18	214	17	249	2	26	10	38	11	132	20	163
+30 mins.	23	104	11	138	23	218	23	264	1	41	9	51	7	110	17	134
+45 mins.	14	94	13	121	22	182	16	220	4	27	7	38	19	92	22	133
Total Volume	68	394	39	501	82	736	64	882	10	130	43	183	55	463	71	589
% App. Total	13.6	78.6	7.8		9.3	83.4	7.3		5.5	71	23.5		9.3	78.6	12.1	
PHF	.739	.947	.750	.908	.891	.844	.696	.835	.625	.793	.632	.817	.724	.877	.807	.903



City of Placentia  
 N/S: Richfield Road  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 39PLARIORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

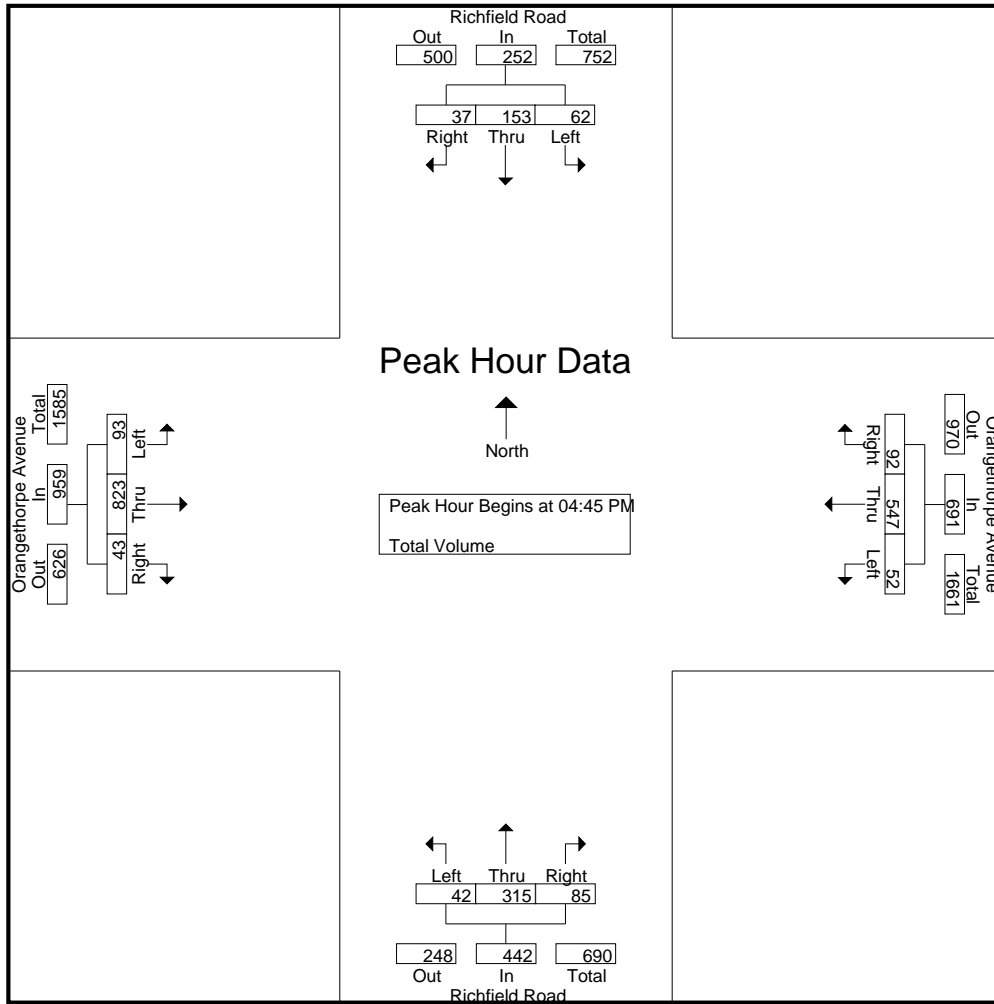
Groups Printed- Total Volume

Start Time	Richfield Road Southbound				Orangethorpe Avenue Westbound				Richfield Road Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	7	39	8	54	8	124	24	156	17	66	14	97	13	157	6	176	483
04:15 PM	20	21	11	52	13	111	16	140	6	64	8	78	32	164	11	207	477
04:30 PM	13	34	6	53	12	119	20	151	11	81	16	108	29	165	13	207	519
04:45 PM	19	36	11	66	16	127	29	172	11	75	27	113	27	213	11	251	602
Total	59	130	36	225	49	481	89	619	45	286	65	396	101	699	41	841	2081
05:00 PM	14	32	9	55	10	145	18	173	10	87	19	116	20	205	9	234	578
05:15 PM	13	44	7	64	17	154	22	193	11	90	21	122	25	215	15	255	634
05:30 PM	16	41	10	67	9	121	23	153	10	63	18	91	21	190	8	219	530
05:45 PM	20	26	12	58	13	128	22	163	4	58	8	70	24	206	16	246	537
Total	63	143	38	244	49	548	85	682	35	298	66	399	90	816	48	954	2279
Grand Total	122	273	74	469	98	1029	174	1301	80	584	131	795	191	1515	89	1795	4360
Apprch %	26	58.2	15.8		7.5	79.1	13.4		10.1	73.5	16.5		10.6	84.4	5		
Total %	2.8	6.3	1.7	10.8	2.2	23.6	4	29.8	1.8	13.4	3	18.2	4.4	34.7	2	41.2	

Start Time	Richfield Road Southbound				Orangethorpe Avenue Westbound				Richfield Road Northbound				Orangethorpe Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	19	36	11	66	16	127	29	172	11	75	27	113	27	213	11	251	602
05:00 PM	14	32	9	55	10	145	18	173	10	87	19	116	20	205	9	234	578
05:15 PM	13	44	7	64	17	154	22	193	11	90	21	122	25	215	15	255	634
05:30 PM	16	41	10	67	9	121	23	153	10	63	18	91	21	190	8	219	530
Total Volume	62	153	37	252	52	547	92	691	42	315	85	442	93	823	43	959	2344
% App. Total	24.6	60.7	14.7		7.5	79.2	13.3		9.5	71.3	19.2		9.7	85.8	4.5		
PHF	.816	.869	.841	.940	.765	.888	.793	.895	.955	.875	.787	.906	.861	.957	.717	.940	.924

City of Placentia  
 N/S: Richfield Road  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 39PLARIORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:30 PM				04:45 PM							
+0 mins.	19	36	11	66	16	127	29	172	11	81	16	108	27	213	11	251
+15 mins.	14	32	9	55	10	145	18	173	11	75	27	113	20	205	9	234
+30 mins.	13	44	7	64	17	154	22	193	10	87	19	116	25	215	15	255
+45 mins.	16	41	10	67	9	121	23	153	11	90	21	122	21	190	8	219
Total Volume	62	153	37	252	52	547	92	691	43	333	83	459	93	823	43	959
% App. Total	24.6	60.7	14.7		7.5	79.2	13.3		9.4	72.5	18.1		9.7	85.8	4.5	
PHF	.816	.869	.841	.940	.765	.888	.793	.895	.977	.925	.769	.941	.861	.957	.717	.940

City of Placentia  
 N/S: Lakeview Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 40PLALAORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

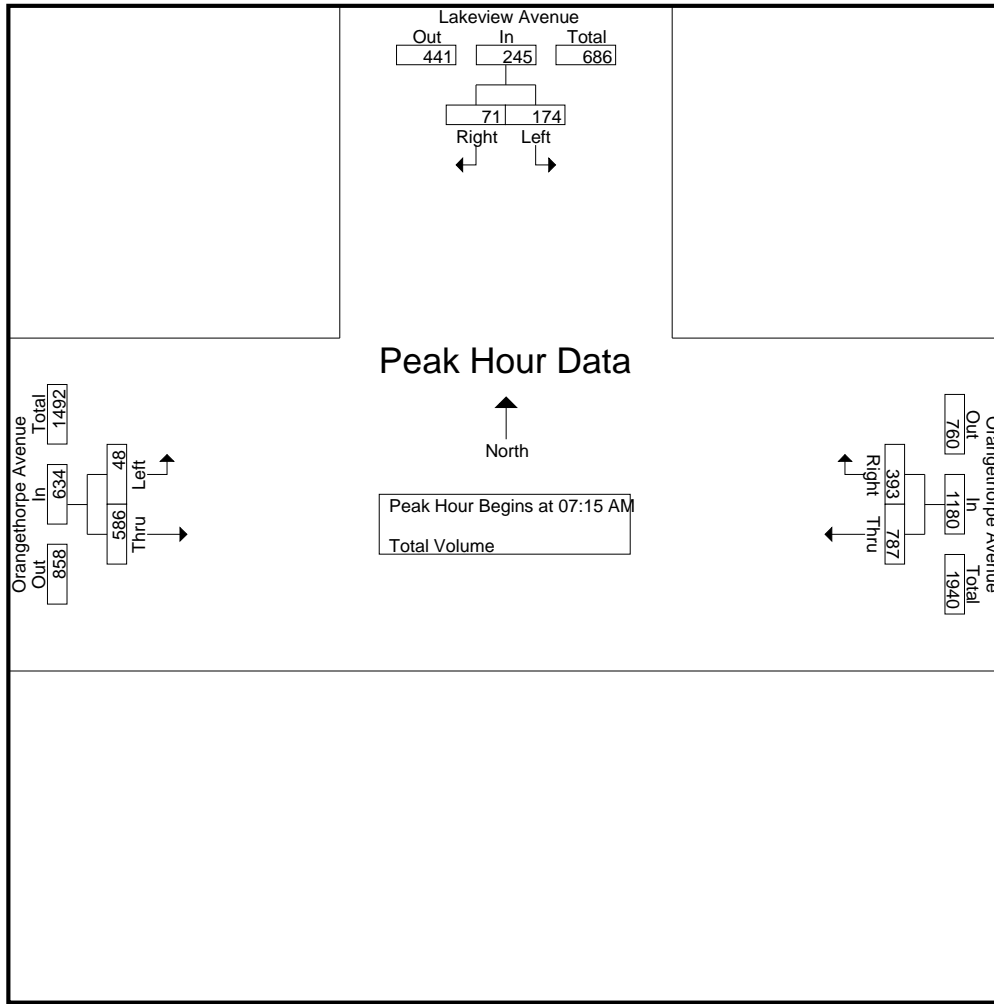
Start Time	Lakeview Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	19	11	30	99	60	159	5	60	65	254
07:15 AM	26	11	37	139	83	222	7	112	119	378
07:30 AM	74	13	87	238	107	345	12	184	196	628
07:45 AM	45	21	66	229	118	347	14	182	196	609
Total	164	56	220	705	368	1073	38	538	576	1869
08:00 AM	29	26	55	181	85	266	15	108	123	444
08:15 AM	20	12	32	106	64	170	16	87	103	305
08:30 AM	21	17	38	129	54	183	12	95	107	328
08:45 AM	15	8	23	114	52	166	9	84	93	282
Total	85	63	148	530	255	785	52	374	426	1359
Grand Total	249	119	368	1235	623	1858	90	912	1002	3228
Apprch %	67.7	32.3		66.5	33.5		9	91		
Total %	7.7	3.7	11.4	38.3	19.3	57.6	2.8	28.3	31	

Start Time	Lakeview Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:15 AM	26	11	37	139	83	222	7	112	119	378
07:30 AM	<b>74</b>	13	<b>87</b>	<b>238</b>	107	345	12	<b>184</b>	<b>196</b>	<b>628</b>
07:45 AM	45	21	66	229	<b>118</b>	<b>347</b>	14	182	196	609
08:00 AM	29	<b>26</b>	55	181	85	266	<b>15</b>	108	123	444
Total Volume	174	71	245	787	393	1180	48	586	634	2059
% App. Total	71	29		66.7	33.3		7.6	92.4		
PHF	.588	.683	.704	.827	.833	.850	.800	.796	.809	.820

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:15 AM

City of Placentia  
 N/S: Lakeview Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 40PLALAORAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	26	11	37	139	83	222	7	112	119
+15 mins.	<b>74</b>	13	<b>87</b>	<b>238</b>	107	345	12	<b>184</b>	<b>196</b>
+30 mins.	45	21	66	229	<b>118</b>	<b>347</b>	14	182	196
+45 mins.	29	<b>26</b>	55	181	85	266	<b>15</b>	108	123
Total Volume	174	71	245	787	393	1180	48	586	634
% App. Total	71	29		66.7	33.3		7.6	92.4	
PHF	.588	.683	.704	.827	.833	.850	.800	.796	.809

City of Placentia  
 N/S: Lakeview Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 40PLALAORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

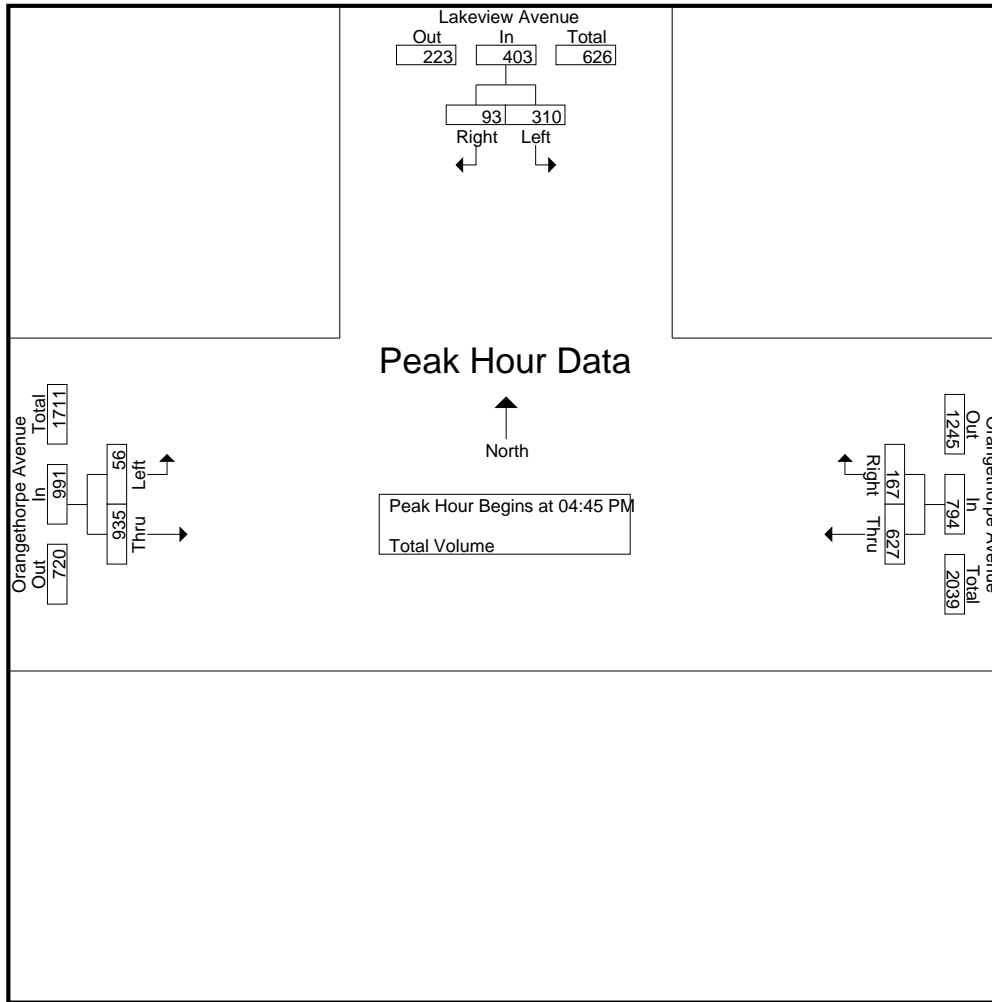
Start Time	Lakeview Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	56	12	68	133	35	168	12	145	157	393
04:15 PM	54	16	70	137	37	174	12	194	206	450
04:30 PM	78	33	111	115	46	161	9	165	174	446
04:45 PM	67	17	84	151	48	199	17	242	259	542
Total	255	78	333	536	166	702	50	746	796	1831
05:00 PM	80	18	98	173	45	218	13	239	252	568
05:15 PM	86	32	118	167	34	201	16	228	244	563
05:30 PM	77	26	103	136	40	176	10	226	236	515
05:45 PM	61	21	82	157	36	193	10	226	236	511
Total	304	97	401	633	155	788	49	919	968	2157
Grand Total	559	175	734	1169	321	1490	99	1665	1764	3988
Apprch %	76.2	23.8		78.5	21.5		5.6	94.4		
Total %	14	4.4	18.4	29.3	8	37.4	2.5	41.8	44.2	

Start Time	Lakeview Avenue Southbound			Orangethorpe Avenue Westbound			Orangethorpe Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:45 PM	67	17	84	151	<b>48</b>	199	17	<b>242</b>	<b>259</b>	542
05:00 PM	80	18	98	<b>173</b>	45	<b>218</b>	13	239	252	<b>568</b>
05:15 PM	<b>86</b>	<b>32</b>	<b>118</b>	167	34	201	16	228	244	563
05:30 PM	77	26	103	136	40	176	10	226	236	515
Total Volume	310	93	403	627	167	794	56	935	991	2188
% App. Total	76.9	23.1		79	21		5.7	94.3		
PHF	.901	.727	.854	.906	.870	.911	.824	.966	.957	.963

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Placentia  
 N/S: Lakeview Avenue  
 E/W: Orangethorpe Avenue  
 Weather: Clear

File Name : 40PLALAORPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:45 PM		
+0 mins.	78	<b>33</b>	111	151	<b>48</b>	199	<b>17</b>	<b>242</b>	<b>259</b>
+15 mins.	67	17	84	<b>173</b>	45	<b>218</b>	13	239	252
+30 mins.	80	18	98	167	34	201	16	228	244
+45 mins.	<b>86</b>	32	<b>118</b>	136	40	176	10	226	236
Total Volume	311	100	411	627	167	794	56	935	991
% App. Total	75.7	24.3		79	21		5.7	94.3	
PHF	.904	.758	.871	.906	.870	.911	.824	.966	.957

City of Placentia  
 N/S: Van Buren Street  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 41PLAVBIAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

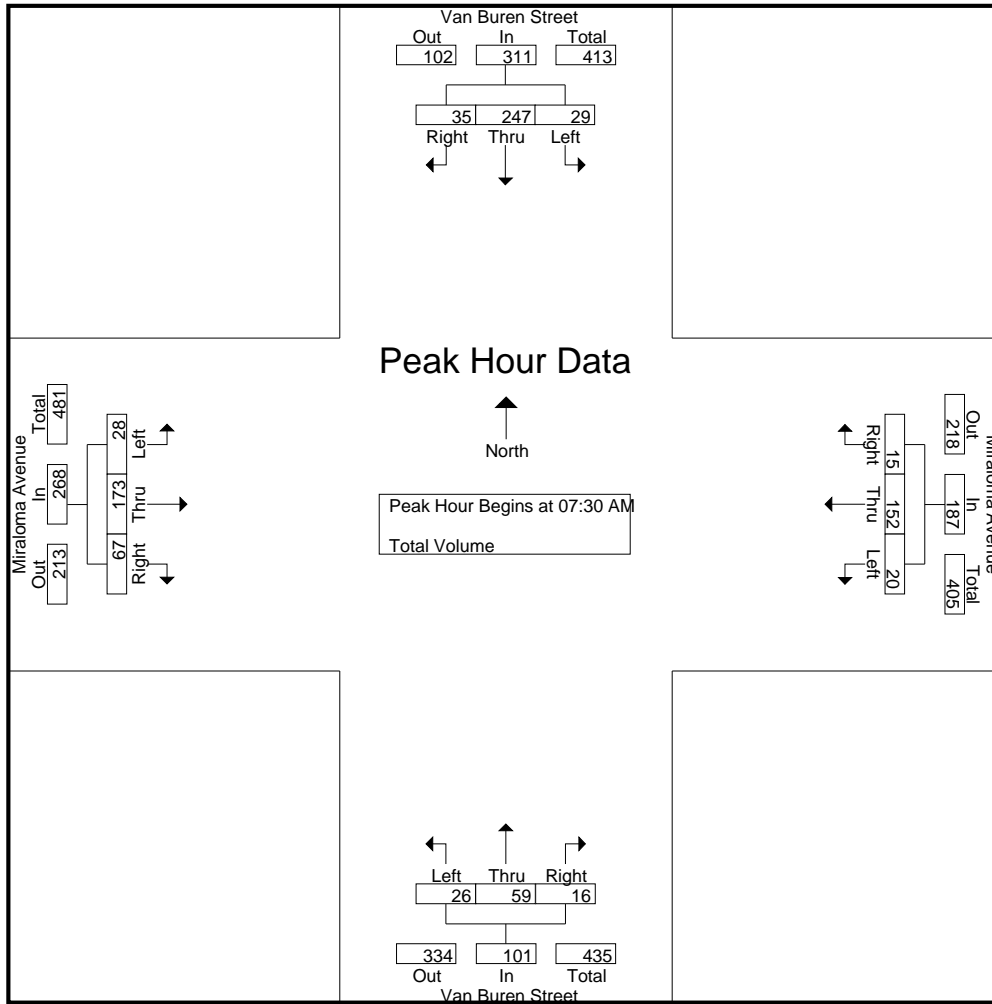
Groups Printed- Total Volume

Start Time	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	7	50	8	65	4	29	4	37	8	14	7	29	12	42	10	64	195
07:15 AM	10	75	7	92	6	28	5	39	3	10	3	16	7	31	6	44	191
07:30 AM	6	67	4	77	4	24	5	33	3	10	4	17	11	34	14	59	186
07:45 AM	11	69	11	91	3	53	5	61	8	14	3	25	8	50	19	77	254
Total	34	261	30	325	17	134	19	170	22	48	17	87	38	157	49	244	826
08:00 AM	8	59	8	75	6	41	5	52	5	16	4	25	5	44	22	71	223
08:15 AM	4	52	12	68	7	34	0	41	10	19	5	34	4	45	12	61	204
08:30 AM	7	30	5	42	4	30	1	35	7	17	2	26	8	35	7	50	153
08:45 AM	3	42	12	57	5	41	0	46	7	16	4	27	10	54	8	72	202
Total	22	183	37	242	22	146	6	174	29	68	15	112	27	178	49	254	782
Grand Total	56	444	67	567	39	280	25	344	51	116	32	199	65	335	98	498	1608
Apprch %	9.9	78.3	11.8		11.3	81.4	7.3		25.6	58.3	16.1		13.1	67.3	19.7		
Total %	3.5	27.6	4.2	35.3	2.4	17.4	1.6	21.4	3.2	7.2	2	12.4	4	20.8	6.1	31	

Start Time	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	6	67	4	77	4	24	5	33	3	10	4	17	11	34	14	59	186
07:45 AM	11	69	11	91	3	53	5	61	8	14	3	25	8	50	19	77	254
08:00 AM	8	59	8	75	6	41	5	52	5	16	4	25	5	44	22	71	223
08:15 AM	4	52	12	68	7	34	0	41	10	19	5	34	4	45	12	61	204
Total Volume	29	247	35	311	20	152	15	187	26	59	16	101	28	173	67	268	867
% App. Total	9.3	79.4	11.3		10.7	81.3	8		25.7	58.4	15.8		10.4	64.6	25		
PHF	.659	.895	.729	.854	.714	.717	.750	.766	.650	.776	.800	.743	.636	.865	.761	.870	.853

City of Placentia  
 N/S: Van Buren Street  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 41PLAVBIAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				08:00 AM				07:30 AM			
+0 mins.	10	<b>75</b>	7	<b>92</b>	3	<b>53</b>	5	<b>61</b>	5	16	4	25	<b>11</b>	34	14	59
+15 mins.	6	67	4	77	6	41	5	52	<b>10</b>	<b>19</b>	<b>5</b>	<b>34</b>	8	<b>50</b>	19	<b>77</b>
+30 mins.	<b>11</b>	69	<b>11</b>	91	<b>7</b>	34	0	41	7	17	2	26	5	44	<b>22</b>	71
+45 mins.	8	59	8	75	4	30	1	35	7	16	4	27	4	45	12	61
Total Volume	35	270	30	335	20	158	11	189	29	68	15	112	28	173	67	268
% App. Total	10.4	80.6	9		10.6	83.6	5.8		25.9	60.7	13.4		10.4	64.6	25	
PHF	.795	.900	.682	.910	.714	.745	.550	.775	.725	.895	.750	.824	.636	.865	.761	.870



City of Placentia  
 N/S: Van Buren Street  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 41PLAVBMIPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

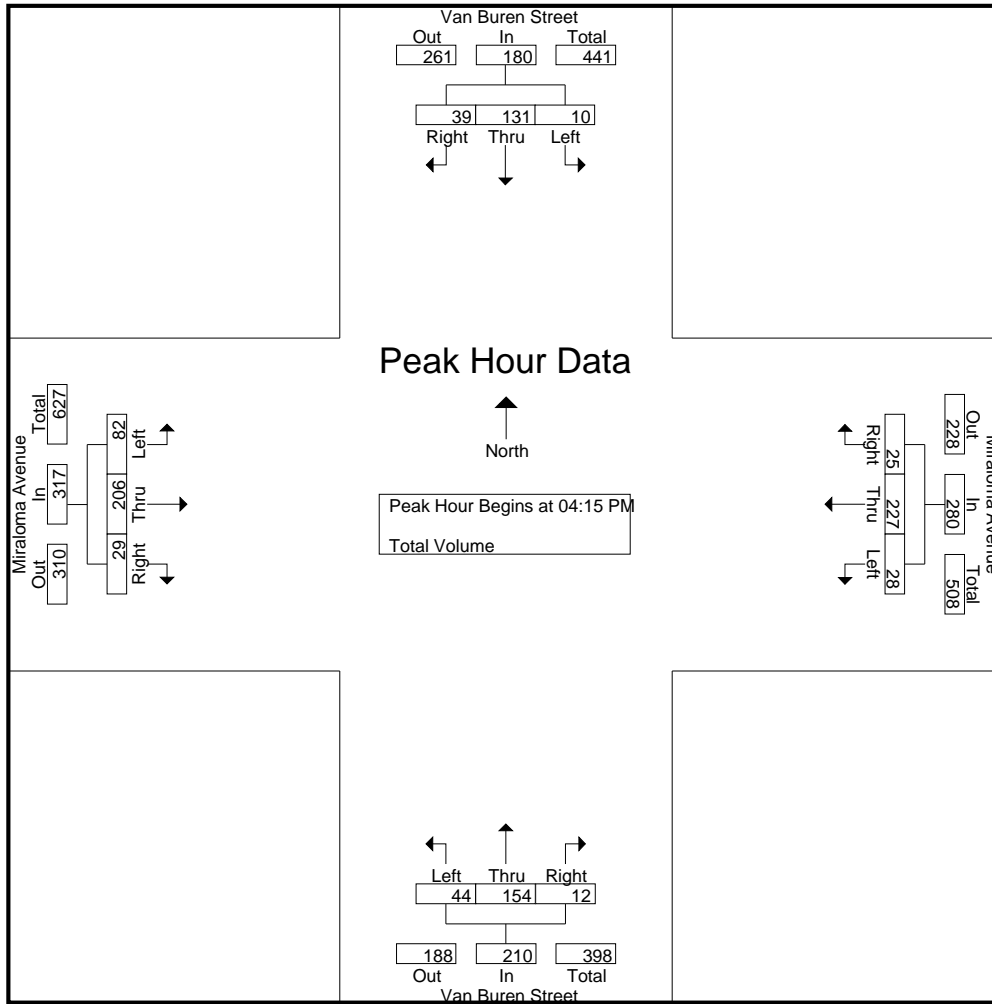
Groups Printed- Total Volume

Start Time	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	4	30	11	45	2	35	8	45	7	37	8	52	23	49	12	84	226
04:15 PM	3	30	11	44	6	40	8	54	10	33	2	45	23	50	6	79	222
04:30 PM	2	47	8	57	10	72	7	89	13	39	2	54	21	46	10	77	277
04:45 PM	2	28	11	41	3	37	7	47	9	34	5	48	19	45	5	69	205
Total	11	135	41	187	21	184	30	235	39	143	17	199	86	190	33	309	930
05:00 PM	3	26	9	38	9	78	3	90	12	48	3	63	19	65	8	92	283
05:15 PM	6	20	9	35	3	47	8	58	11	36	3	50	22	43	5	70	213
05:30 PM	3	33	10	46	3	35	5	43	10	28	5	43	15	41	3	59	191
05:45 PM	5	29	13	47	4	29	7	40	8	28	2	38	17	42	0	59	184
Total	17	108	41	166	19	189	23	231	41	140	13	194	73	191	16	280	871
Grand Total	28	243	82	353	40	373	53	466	80	283	30	393	159	381	49	589	1801
Apprch %	7.9	68.8	23.2		8.6	80	11.4		20.4	72	7.6		27	64.7	8.3		
Total %	1.6	13.5	4.6	19.6	2.2	20.7	2.9	25.9	4.4	15.7	1.7	21.8	8.8	21.2	2.7	32.7	

Start Time	Van Buren Street Southbound				Miraloma Avenue Westbound				Van Buren Street Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	3	30	11	44	6	40	8	54	10	33	2	45	23	50	6	79	222
04:30 PM	2	47	8	57	10	72	7	89	13	39	2	54	21	46	10	77	277
04:45 PM	2	28	11	41	3	37	7	47	9	34	5	48	19	45	5	69	205
05:00 PM	3	26	9	38	9	78	3	90	12	48	3	63	19	65	8	92	283
Total Volume	10	131	39	180	28	227	25	280	44	154	12	210	82	206	29	317	987
% App. Total	5.6	72.8	21.7		10	81.1	8.9		21	73.3	5.7		25.9	65	9.1		
PHF	.833	.697	.886	.789	.700	.728	.781	.778	.846	.802	.600	.833	.891	.792	.725	.861	.872

City of Placentia  
 N/S: Van Buren Street  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 41PLAVBMIPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:30 PM				04:15 PM			
+0 mins.	<b>4</b>	30	<b>11</b>	45	<b>10</b>	72	7	89	<b>13</b>	39	2	54	<b>23</b>	50	6	79
+15 mins.	3	30	11	44	3	37	7	47	9	34	<b>5</b>	48	21	46	<b>10</b>	77
+30 mins.	2	<b>47</b>	8	<b>57</b>	9	<b>78</b>	3	<b>90</b>	12	<b>48</b>	3	<b>63</b>	19	45	5	69
+45 mins.	2	28	11	41	3	47	<b>8</b>	58	11	36	3	50	19	<b>65</b>	8	<b>92</b>
Total Volume	11	135	41	187	25	234	25	284	45	157	13	215	82	206	29	317
% App. Total	5.9	72.2	21.9		8.8	82.4	8.8		20.9	73	6		25.9	65	9.1	
PHF	.688	.718	.932	.820	.625	.750	.781	.789	.865	.818	.650	.853	.891	.792	.725	.861

City of Placentia  
 N/S: Richfield Road  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 42PLARIMIAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

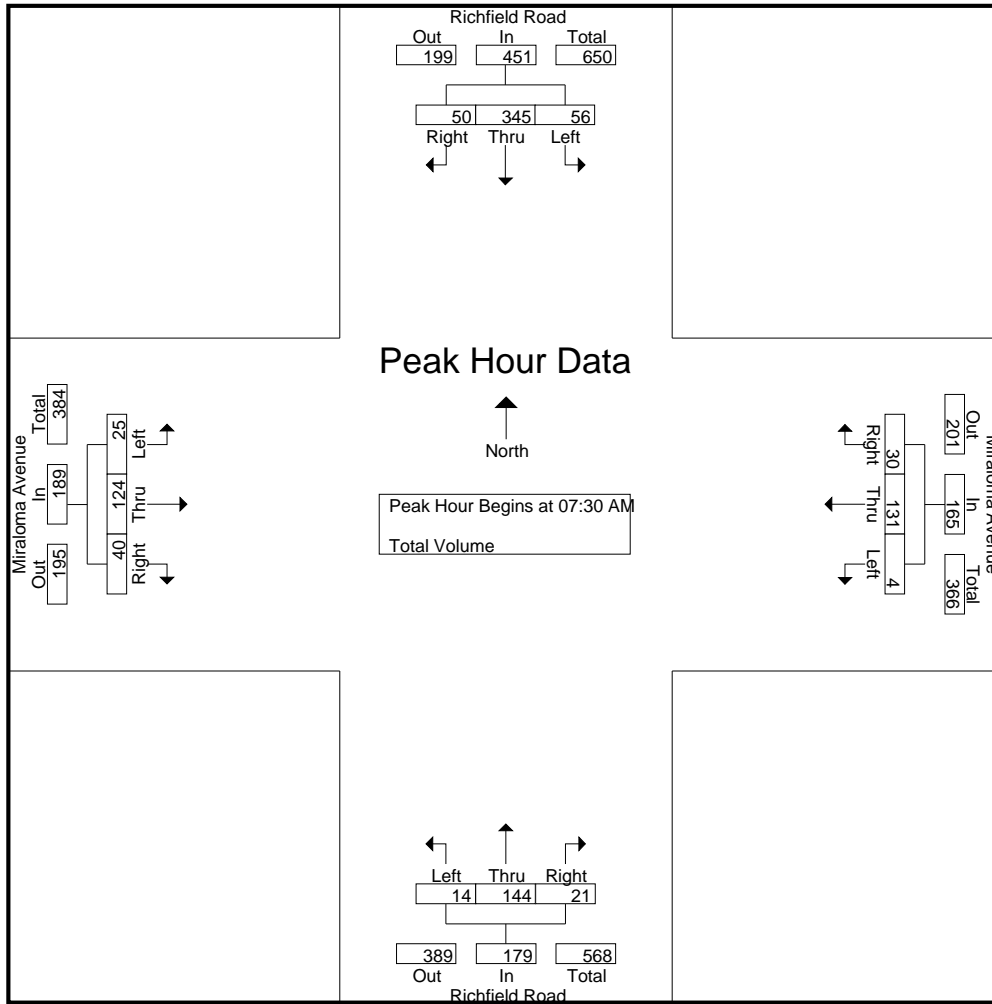
Groups Printed- Total Volume

Start Time	Richfield Road Southbound				Miraloma Avenue Westbound				Richfield Road Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	79	9	91	0	27	6	33	4	37	8	49	9	14	9	32	205
07:15 AM	10	91	14	115	0	21	6	27	3	24	1	28	7	22	9	38	208
07:30 AM	7	94	14	115	0	20	7	27	2	48	4	54	8	25	7	40	236
07:45 AM	19	95	16	130	0	42	9	51	4	33	3	40	5	38	11	54	275
Total	39	359	53	451	0	110	28	138	13	142	16	171	29	99	36	164	924
08:00 AM	17	96	9	122	1	37	8	46	5	26	8	39	8	25	13	46	253
08:15 AM	13	60	11	84	3	32	6	41	3	37	6	46	4	36	9	49	220
08:30 AM	9	62	6	77	3	31	9	43	5	35	7	47	4	30	6	40	207
08:45 AM	10	61	14	85	1	32	5	38	3	35	10	48	5	28	10	43	214
Total	49	279	40	368	8	132	28	168	16	133	31	180	21	119	38	178	894
Grand Total	88	638	93	819	8	242	56	306	29	275	47	351	50	218	74	342	1818
Apprch %	10.7	77.9	11.4		2.6	79.1	18.3		8.3	78.3	13.4		14.6	63.7	21.6		
Total %	4.8	35.1	5.1	45	0.4	13.3	3.1	16.8	1.6	15.1	2.6	19.3	2.8	12	4.1	18.8	

Start Time	Richfield Road Southbound				Miraloma Avenue Westbound				Richfield Road Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	7	94	14	115	0	20	7	27	2	48	4	54	8	25	7	40	236
07:45 AM	19	95	16	130	0	42	9	51	4	33	3	40	5	38	11	54	275
08:00 AM	17	96	9	122	1	37	8	46	5	26	8	39	8	25	13	46	253
08:15 AM	13	60	11	84	3	32	6	41	3	37	6	46	4	36	9	49	220
Total Volume	56	345	50	451	4	131	30	165	14	144	21	179	25	124	40	189	984
% App. Total	12.4	76.5	11.1		2.4	79.4	18.2		7.8	80.4	11.7		13.2	65.6	21.2		
PHF	.737	.898	.781	.867	.333	.780	.833	.809	.700	.750	.656	.829	.781	.816	.769	.875	.895

City of Placentia  
 N/S: Richfield Road  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 42PLARIMIAM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				08:00 AM				07:30 AM			
+0 mins.	10	91	14	115	0	<b>42</b>	<b>9</b>	<b>51</b>	<b>5</b>	26	8	39	<b>8</b>	25	7	40
+15 mins.	7	94	14	115	1	37	8	46	3	<b>37</b>	6	46	5	<b>38</b>	11	<b>54</b>
+30 mins.	<b>19</b>	95	<b>16</b>	<b>130</b>	<b>3</b>	32	6	41	5	35	7	47	8	25	<b>13</b>	46
+45 mins.	17	<b>96</b>	9	122	3	31	9	43	3	35	<b>10</b>	<b>48</b>	4	36	9	49
Total Volume	53	376	53	482	7	142	32	181	16	133	31	180	25	124	40	189
% App. Total	11	78	11		3.9	78.5	17.7		8.9	73.9	17.2		13.2	65.6	21.2	
PHF	.697	.979	.828	.927	.583	.845	.889	.887	.800	.899	.775	.938	.781	.816	.769	.875

City of Placentia  
 N/S: Richfield Road  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 42PLARIMIPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 1

Groups Printed- Total Volume

Start Time	Richfield Road Southbound				Miraloma Avenue Westbound				Richfield Road Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	2	51	8	61	2	34	9	45	0	57	0	57	14	40	5	59	222
04:15 PM	5	34	3	42	1	30	10	41	8	50	2	60	13	51	3	67	210
04:30 PM	6	59	6	71	9	55	20	84	13	65	3	81	14	33	8	55	291
04:45 PM	7	56	13	76	3	24	9	36	3	73	3	79	15	35	4	54	245
Total	20	200	30	250	15	143	48	206	24	245	8	277	56	159	20	235	968
05:00 PM	3	60	10	73	5	41	9	55	9	68	4	81	19	50	7	76	285
05:15 PM	13	50	7	70	0	37	9	46	4	71	1	76	9	44	7	60	252
05:30 PM	3	60	4	67	0	25	13	38	5	63	2	70	11	31	7	49	224
05:45 PM	10	46	3	59	3	28	4	35	5	58	2	65	4	35	7	46	205
Total	29	216	24	269	8	131	35	174	23	260	9	292	43	160	28	231	966
Grand Total	49	416	54	519	23	274	83	380	47	505	17	569	99	319	48	466	1934
Apprch %	9.4	80.2	10.4		6.1	72.1	21.8		8.3	88.8	3		21.2	68.5	10.3		
Total %	2.5	21.5	2.8	26.8	1.2	14.2	4.3	19.6	2.4	26.1	0.9	29.4	5.1	16.5	2.5	24.1	

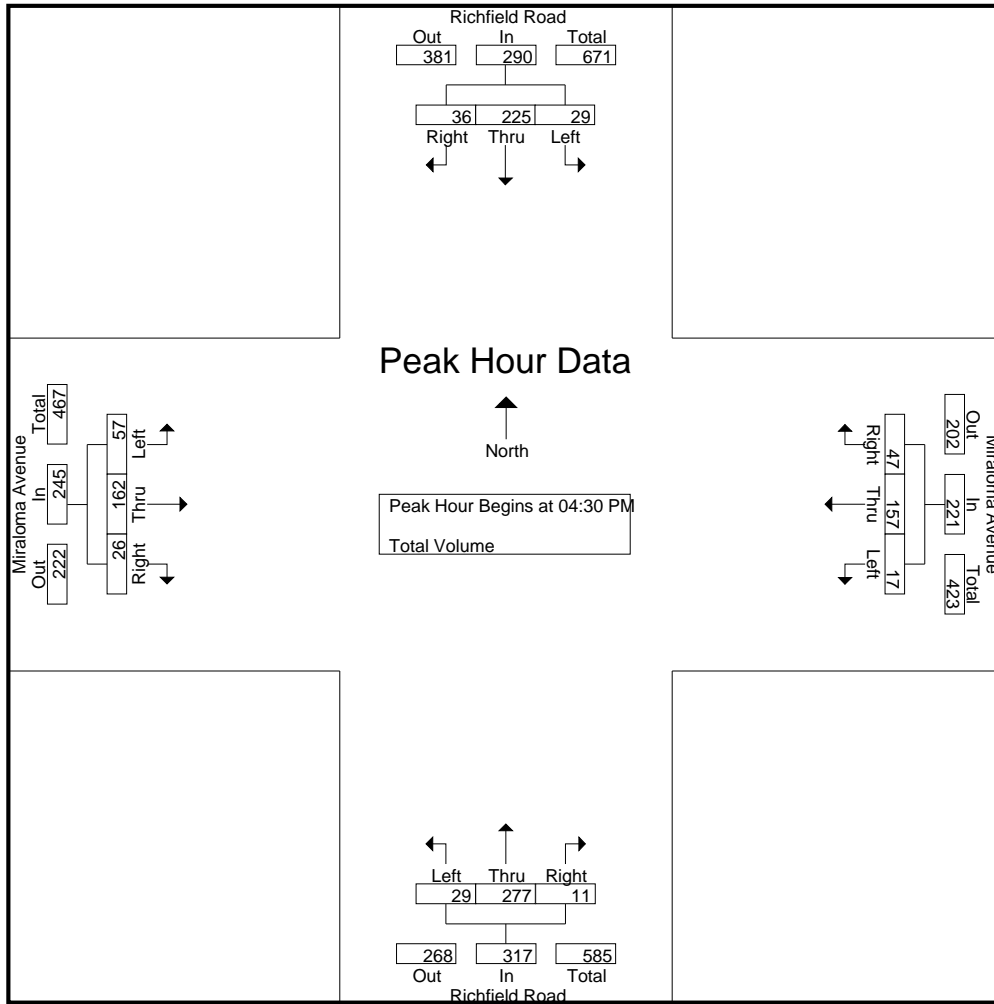
Start Time	Richfield Road Southbound				Miraloma Avenue Westbound				Richfield Road Northbound				Miraloma Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	6	59	6	71	9	55	20	84	13	65	3	81	14	33	8	55	291
04:45 PM	7	56	13	76	3	24	9	36	3	73	3	79	15	35	4	54	245
05:00 PM	3	60	10	73	5	41	9	55	9	68	4	81	19	50	7	76	285
05:15 PM	13	50	7	70	0	37	9	46	4	71	1	76	9	44	7	60	252
Total Volume	29	225	36	290	17	157	47	221	29	277	11	317	57	162	26	245	1073
% App. Total	10	77.6	12.4		7.7	71	21.3		9.1	87.4	3.5		23.3	66.1	10.6		
PHF	.558	.938	.692	.954	.472	.714	.588	.658	.558	.949	.688	.978	.750	.810	.813	.806	.922

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM

City of Placentia  
 N/S: Richfield Road  
 E/W: Miraloma Avenue  
 Weather: Clear

File Name : 42PLARIMIPM  
 Site Code : 22117718  
 Start Date : 11/2/2017  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

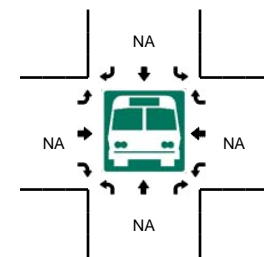
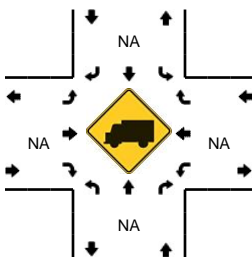
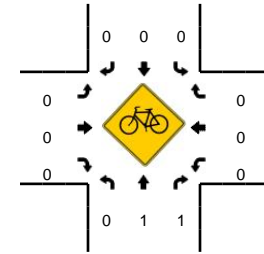
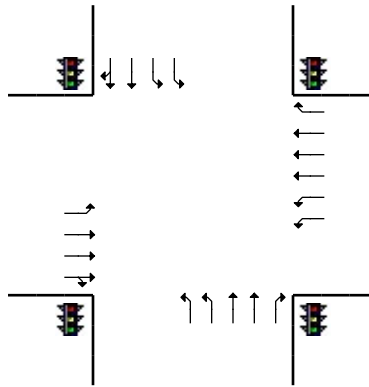
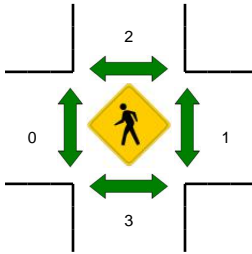
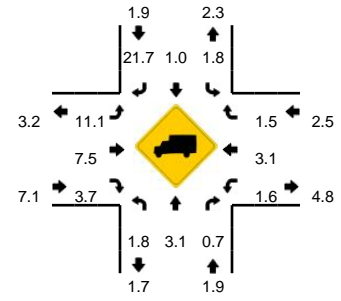
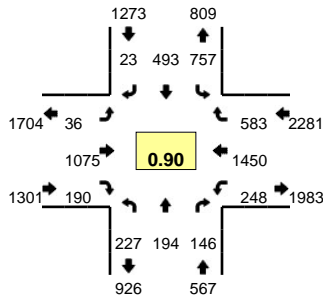
	04:30 PM				04:30 PM				04:30 PM				04:15 PM			
+0 mins.	6	59	6	71	<b>9</b>	<b>55</b>	<b>20</b>	<b>84</b>	<b>13</b>	65	3	<b>81</b>	13	<b>51</b>	3	67
+15 mins.	7	56	<b>13</b>	<b>76</b>	3	24	9	36	3	<b>73</b>	3	79	14	33	<b>8</b>	55
+30 mins.	3	<b>60</b>	10	73	5	41	9	55	9	68	<b>4</b>	81	15	35	4	54
+45 mins.	<b>13</b>	50	7	70	0	37	9	46	4	71	1	76	<b>19</b>	50	7	<b>76</b>
Total Volume	29	225	36	290	17	157	47	221	29	277	11	317	61	169	22	252
% App. Total	10	77.6	12.4		7.7	71	21.3		9.1	87.4	3.5		24.2	67.1	8.7	
PHF	.558	.938	.692	.954	.472	.714	.588	.658	.558	.949	.688	.978	.803	.828	.688	.829

**LOCATION:** Rose Dr -- Imperial Hwy  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 177

**QC JOB #:** 14106285  
**DATE:** Tue, Mar 07 2017

**Peak-Hour: 7:35 AM -- 8:35 AM**  
**Peak 15-Min: 7:40 AM -- 7:55 AM**



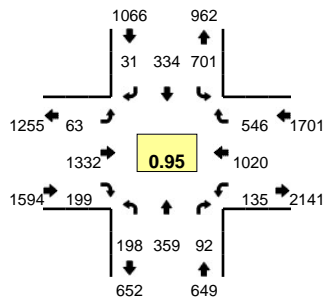
5-Min Count Period Beginning At	Rose Dr (Northbound)				Rose Dr (Southbound)				Imperial Hwy (Eastbound)				Imperial Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	11	10	9	0	72	47	1	0	0	78	8	0	8	84	29	1	358	3084
7:05 AM	14	15	8	0	66	31	2	0	2	94	17	0	10	76	25	1	361	3276
7:10 AM	16	10	7	0	51	15	1	0	1	66	6	0	13	74	41	0	301	3393
7:15 AM	10	8	4	0	70	57	1	0	3	88	16	0	7	107	49	0	420	3613
7:20 AM	17	12	6	0	55	49	3	0	4	83	14	0	14	126	49	0	432	3824
7:25 AM	7	6	7	0	83	48	0	0	1	114	22	0	9	81	26	1	405	3993
7:30 AM	15	16	9	0	69	35	5	0	1	88	12	0	35	86	36	0	407	4176
7:35 AM	19	23	17	0	71	39	3	0	3	84	25	0	40	99	45	0	468	4365
7:40 AM	16	19	18	0	65	60	1	0	5	117	18	0	41	109	49	0	518	4579
7:45 AM	28	17	19	0	53	33	2	0	3	76	25	0	16	151	46	1	470	4756
7:50 AM	20	22	16	0	63	50	1	0	1	107	19	0	14	144	57	0	514	4898
7:55 AM	8	9	10	0	60	43	2	0	4	119	22	0	13	143	48	0	481	5135
8:00 AM	18	15	13	0	81	30	2	0	1	83	10	0	14	97	44	0	408	5185
8:05 AM	23	5	4	0	52	42	2	0	4	105	20	1	12	137	58	1	466	5290
8:10 AM	18	11	9	0	55	27	2	0	2	60	11	0	27	122	54	2	400	5389
8:15 AM	14	14	11	0	71	57	1	0	1	79	7	1	20	92	43	0	411	5380
8:20 AM	13	10	12	0	60	35	2	0	2	96	8	1	18	104	43	0	404	5352
8:25 AM	26	20	10	0	67	44	2	0	1	72	19	0	18	130	47	1	457	5404
8:30 AM	24	29	7	0	59	33	3	0	5	77	6	1	10	122	49	0	425	5422
8:35 AM	12	10	9	0	62	43	2	0	0	80	15	0	6	97	38	1	375	5329
8:40 AM	20	21	9	0	45	36	1	0	1	60	16	0	11	89	51	1	361	5172
8:45 AM	27	13	14	0	47	28	2	0	2	60	13	1	4	101	43	0	355	5057
8:50 AM	4	8	9	0	71	50	2	0	4	83	8	0	7	88	29	0	363	4906
8:55 AM	15	19	11	0	43	28	3	0	5	75	6	0	11	93	44	0	353	4778
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	256	232	212	0	724	572	16	0	36	1200	248	0	284	1616	608	4	6008	
Heavy Trucks	8	4	0		16	8	4		8	60	12		0	60	8		188	
Pedestrians		0				0				0				0			0	
Bicycles		0				0				0				0			0	
Railroad																		
Stopped Buses																		

Comments:

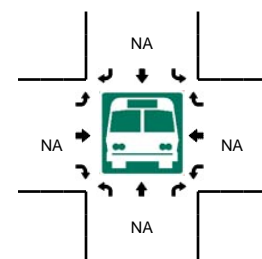
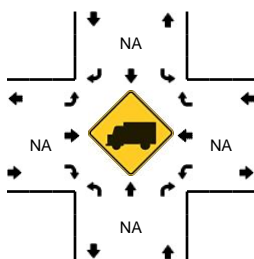
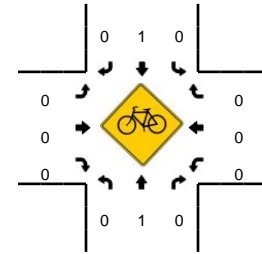
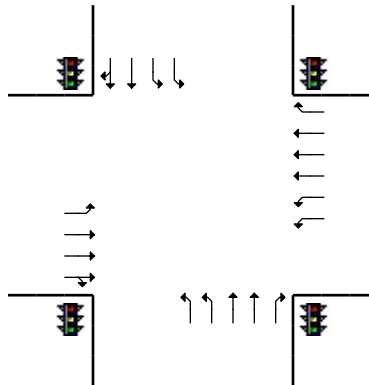
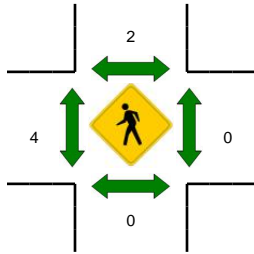
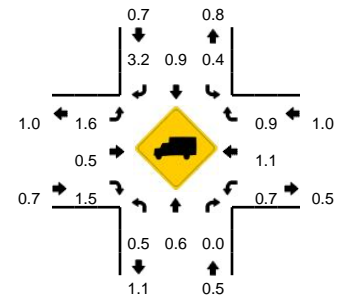
**LOCATION:** Rose Dr -- Imperial Hwy  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 177

**QC JOB #:** 14106286  
**DATE:** Tue, Feb 07 2017



**Peak-Hour: 4:40 PM -- 5:40 PM**  
**Peak 15-Min: 5:10 PM -- 5:25 PM**



5-Min Count Period Beginning At	Rose Dr (Northbound)				Rose Dr (Southbound)				Imperial Hwy (Eastbound)				Imperial Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:10 PM	16	23	3	0	64	30	2	0	4	87	15	0	10	85	41	1	381	4344
4:15 PM	15	35	8	0	56	26	2	0	2	99	18	1	11	76	49	2	400	4397
4:20 PM	11	24	9	0	60	26	1	0	2	112	19	0	17	69	44	2	396	4417
4:25 PM	19	31	15	0	61	15	1	0	1	91	9	0	8	71	34	0	356	4450
4:30 PM	10	23	15	0	64	24	1	0	3	85	12	1	8	87	55	0	388	4478
4:35 PM	20	37	8	0	45	14	2	0	1	106	22	0	10	81	46	1	393	4528
4:40 PM	14	25	6	0	56	29	3	0	6	126	16	0	8	73	57	0	419	4517
4:45 PM	20	42	10	0	61	20	2	0	5	87	14	0	12	85	46	2	406	4553
4:50 PM	13	30	5	0	62	35	4	0	4	89	13	0	9	81	42	0	387	4578
4:55 PM	19	34	5	0	56	30	0	0	6	112	11	0	11	74	39	1	398	4635
5:00 PM	14	28	9	0	57	27	2	0	4	121	9	0	8	96	43	1	419	4708
5:05 PM	18	29	13	0	59	18	1	0	2	90	31	2	7	70	31	1	372	4715
5:10 PM	13	27	7	0	59	31	2	0	10	131	21	3	9	95	45	3	456	4790
5:15 PM	22	38	8	0	62	30	4	0	3	116	13	1	12	73	45	2	429	4819
5:20 PM	12	12	6	0	63	35	2	0	4	131	20	0	2	106	45	0	438	4861
5:25 PM	16	40	7	0	61	29	5	0	5	101	14	0	16	86	57	3	440	4945
5:30 PM	14	22	11	0	55	33	2	0	6	113	16	0	10	89	54	2	427	4984
5:35 PM	23	32	5	0	50	17	4	0	2	115	21	0	15	92	42	1	419	5010
5:40 PM	12	23	6	0	55	25	2	0	4	70	22	0	7	83	60	0	369	4960
5:45 PM	15	29	15	0	62	7	2	0	4	54	14	0	9	67	35	0	313	4867
5:50 PM	6	23	8	0	58	28	2	0	2	105	19	0	6	84	54	0	395	4875
5:55 PM	11	40	7	0	53	14	2	0	5	90	6	0	10	73	47	4	362	4839
6:00 PM	16	20	8	0	58	25	0	0	4	111	13	0	12	77	43	0	387	4807
6:05 PM	24	25	2	0	50	16	4	0	3	84	16	2	7	82	38	2	355	4790
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	188	308	84	0	736	384	32	0	68	1512	216	16	92	1096	540	20	5292	
Heavy Trucks	0	0	0		0	4	4		0	16	0		0	0	0		24	
Pedestrians		0				0				4				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

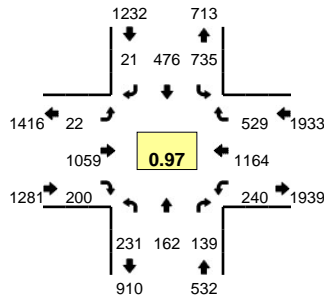
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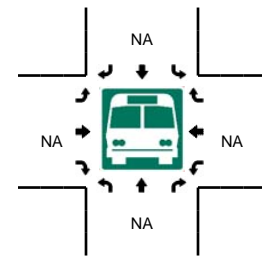
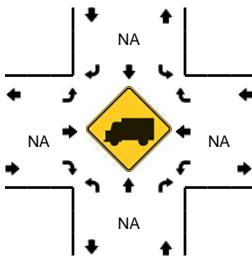
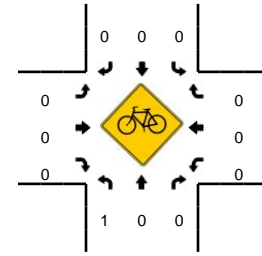
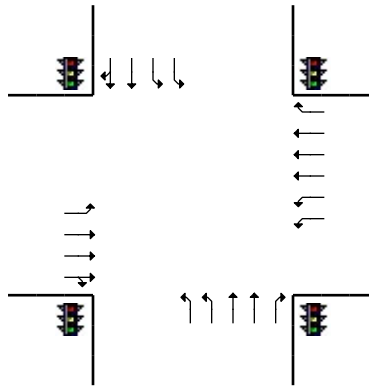
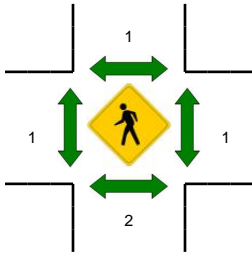
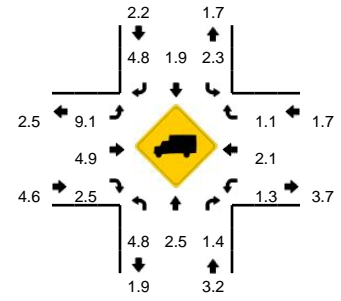
**LOCATION:** Rose Dr -- Imperial Hwy  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 177

**QC JOB #:** 14106287  
**DATE:** Wed, Feb 08 2017



**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:35 AM -- 7:50 AM**



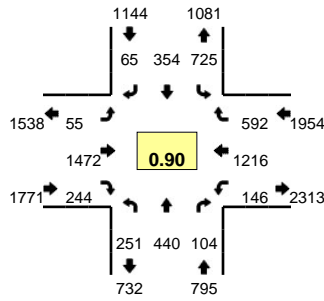
5-Min Count Period Beginning At	Rose Dr (Northbound)				Rose Dr (Southbound)				Imperial Hwy (Eastbound)				Imperial Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	5	6	0	47	26	1	0	2	69	16	0	6	74	38	4	304	2822
7:05 AM	12	5	8	0	66	64	1	0	5	98	17	0	5	56	18	2	357	3045
7:10 AM	16	8	5	0	66	53	0	0	1	77	13	0	9	104	45	0	397	3286
7:15 AM	12	17	2	0	66	57	1	0	1	60	8	0	17	82	42	1	366	3477
7:20 AM	12	3	8	0	57	41	0	0	0	85	14	0	11	112	60	0	403	3689
7:25 AM	17	13	8	0	66	38	2	0	2	67	10	1	12	74	41	1	352	3839
7:30 AM	15	6	14	0	59	35	0	0	1	94	19	0	31	107	48	0	429	4036
7:35 AM	6	7	16	0	87	55	1	0	0	91	26	0	27	58	22	0	396	4188
7:40 AM	22	17	8	0	64	39	4	0	3	93	15	0	31	97	39	0	432	4340
7:45 AM	21	9	7	0	64	22	4	0	0	110	19	0	20	115	58	0	449	4508
7:50 AM	35	16	16	0	61	31	2	0	0	63	5	0	12	94	53	1	389	4582
7:55 AM	9	9	19	0	63	46	1	0	4	113	19	0	8	104	40	0	435	4709
8:00 AM	23	9	12	0	45	23	1	0	3	93	18	0	18	118	42	3	408	4813
8:05 AM	23	17	11	0	58	52	1	0	1	68	11	0	11	96	48	0	397	4853
8:10 AM	12	17	5	0	55	38	1	0	2	95	17	0	23	100	50	1	416	4872
8:15 AM	25	16	10	0	61	42	1	0	2	88	14	0	17	74	40	1	391	4897
8:20 AM	20	18	12	0	56	51	3	0	4	78	20	0	19	89	38	0	408	4902
8:25 AM	20	21	9	0	62	42	2	0	2	73	17	0	17	112	51	0	428	4978
8:30 AM	26	11	7	0	51	35	2	0	2	75	17	0	9	117	33	0	385	4934
8:35 AM	22	11	8	0	60	31	2	0	4	66	15	0	7	74	29	0	329	4867
8:40 AM	21	14	5	0	62	30	2	0	6	67	16	1	17	102	46	0	389	4824
8:45 AM	20	18	9	0	60	24	1	0	3	64	11	1	21	92	42	0	366	4741
8:50 AM	10	16	8	0	60	28	5	0	5	72	12	1	14	80	41	0	352	4704
8:55 AM	14	16	7	0	49	24	3	0	3	46	16	0	22	68	25	0	293	4562
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	196	132	124	0	860	464	36	0	12	1176	240	0	312	1080	476	0	5108	
Heavy Trucks	12	0	0		8	0	4		0	36	8		0	12	8		88	
Pedestrians	0				4				4				0				8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

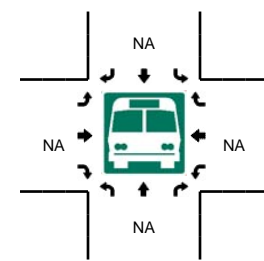
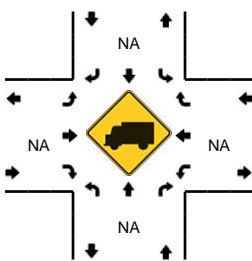
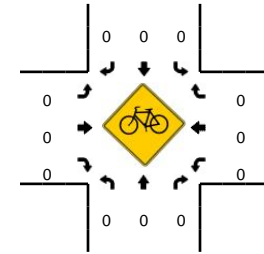
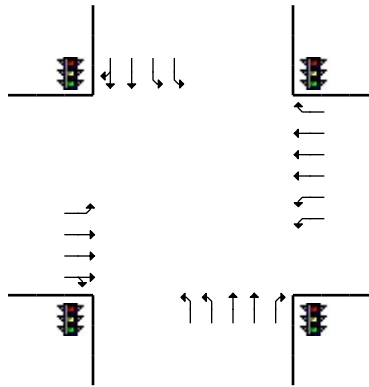
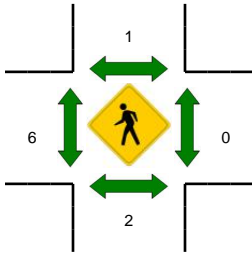
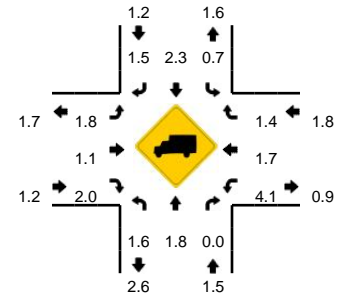
**LOCATION:** Rose Dr -- Imperial Hwy  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 177

**QC JOB #:** 14106288  
**DATE:** Wed, Feb 08 2017



**Peak-Hour: 4:35 PM -- 5:35 PM**  
**Peak 15-Min: 5:10 PM -- 5:25 PM**



5-Min Count Period Beginning At	Rose Dr (Northbound)				Rose Dr (Southbound)				Imperial Hwy (Eastbound)				Imperial Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	20	42	5	0	37	23	9	0	2	97	20	0	11	86	48	1	401	4676
4:10 PM	14	22	8	0	67	26	27	0	3	118	18	0	13	116	43	0	475	4743
4:15 PM	17	31	10	0	23	7	51	0	1	99	34	0	14	82	57	2	428	4822
4:20 PM	19	22	10	0	13	8	40	0	2	159	26	2	4	110	46	1	462	4850
4:25 PM	25	30	5	0	12	9	34	0	8	119	19	1	17	73	45	1	398	4882
4:30 PM	13	23	7	0	21	19	31	0	7	141	31	0	7	103	41	0	444	4953
4:35 PM	25	43	8	0	43	13	28	0	3	122	17	0	13	80	54	3	452	5051
4:40 PM	15	22	3	0	67	27	16	0	6	132	26	2	7	117	52	1	493	5145
4:45 PM	25	46	10	0	48	31	3	0	5	108	15	1	15	83	47	0	437	5180
4:50 PM	10	33	9	0	67	37	0	0	1	95	15	0	10	122	59	1	459	5246
4:55 PM	29	47	12	0	58	23	2	0	3	114	17	0	16	70	36	2	429	5309
5:00 PM	6	27	6	0	64	33	2	0	7	121	31	0	11	123	36	1	468	5346
5:05 PM	23	31	9	0	65	26	2	0	3	124	27	0	13	88	35	0	446	5391
5:10 PM	17	35	11	0	63	42	2	0	4	161	24	2	4	122	48	1	536	5452
5:15 PM	31	51	8	0	60	27	3	0	0	118	15	0	18	95	65	1	492	5516
5:20 PM	22	34	7	0	66	42	3	0	11	148	20	1	5	134	61	0	554	5608
5:25 PM	32	51	11	0	61	24	2	0	3	116	20	0	11	73	42	1	447	5657
5:30 PM	16	20	10	0	63	29	2	0	3	113	17	0	11	109	57	1	451	5664
5:35 PM	22	26	13	0	53	22	1	0	1	105	17	0	16	88	49	6	419	5631
5:40 PM	20	31	5	0	51	39	3	0	5	133	17	3	7	117	53	2	486	5624
5:45 PM	14	25	10	0	60	26	3	0	4	90	20	2	10	72	32	1	369	5556
5:50 PM	16	27	14	0	74	25	3	0	3	124	15	1	9	93	41	0	445	5542
5:55 PM	21	38	11	0	51	25	3	0	2	102	14	0	18	81	44	1	411	5524
6:00 PM	19	37	4	0	48	23	2	0	5	101	20	0	8	95	46	1	409	5465
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	280	480	104	0	756	444	32	0	60	1708	236	12	108	1404	696	8	6328	
Heavy Trucks	8	4	0		8	8	0		0	8	8		0	32	4		80	
Pedestrians		8				4				0				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

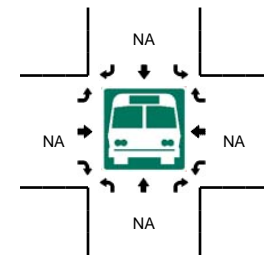
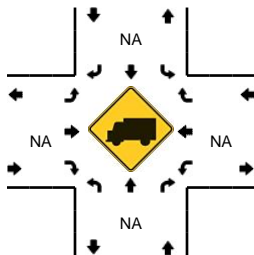
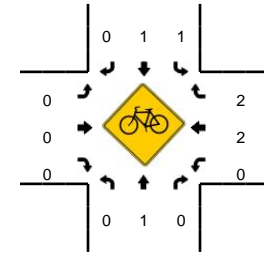
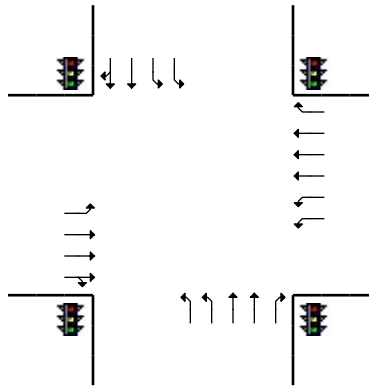
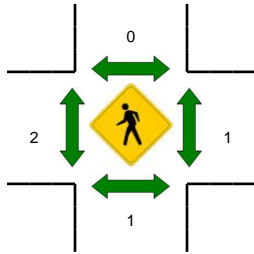
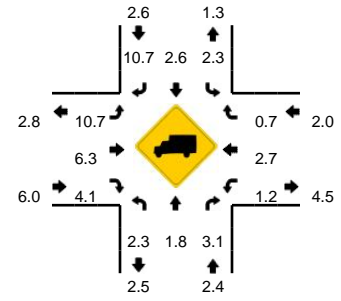
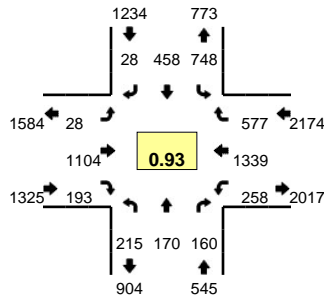
Comments:

**LOCATION:** Rose Dr -- Imperial Hwy  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 177

**QC JOB #:** 14106289  
**DATE:** Thu, Feb 09 2017

**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:40 AM -- 7:55 AM**



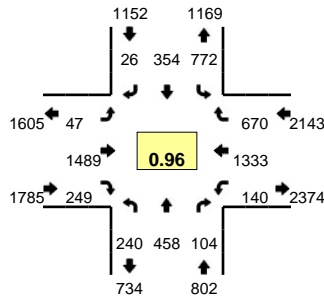
5-Min Count Period Beginning At	Rose Dr (Northbound)				Rose Dr (Southbound)				Imperial Hwy (Eastbound)				Imperial Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	13	11	10	0	66	50	0	0	0	56	9	0	7	84	37	1	344	2965
7:05 AM	4	8	7	0	69	42	1	0	1	70	4	0	10	87	29	2	334	3164
7:10 AM	20	10	3	0	48	30	3	0	3	94	17	0	12	76	42	0	358	3326
7:15 AM	7	6	6	0	80	61	2	0	3	88	11	0	8	105	41	1	419	3584
7:20 AM	16	18	4	0	59	29	1	0	2	78	12	0	13	82	57	1	372	3757
7:25 AM	13	12	10	0	46	27	1	0	3	104	10	0	14	82	54	0	376	3922
7:30 AM	10	19	12	0	59	39	2	0	2	79	17	0	38	107	30	0	414	4098
7:35 AM	20	10	12	0	59	31	5	0	3	91	19	1	39	112	45	0	447	4268
7:40 AM	19	12	17	0	77	55	2	0	3	91	24	0	35	114	45	1	495	4484
7:45 AM	22	18	18	0	65	45	2	0	2	128	13	0	17	81	35	0	446	4643
7:50 AM	19	19	15	0	63	35	4	0	5	99	23	0	16	138	46	1	483	4801
7:55 AM	21	13	11	0	52	36	1	0	1	120	14	0	9	130	57	0	465	4953
8:00 AM	16	16	17	0	63	33	3	0	2	93	13	0	14	127	42	0	439	5048
8:05 AM	17	8	17	0	63	38	1	0	2	45	7	0	21	101	57	0	377	5091
8:10 AM	9	21	7	0	63	37	1	0	0	96	12	0	17	102	50	0	415	5148
8:15 AM	10	8	13	0	57	44	2	0	3	78	15	0	17	119	66	1	433	5162
8:20 AM	29	14	15	0	61	33	2	0	2	92	16	0	13	80	39	0	396	5186
8:25 AM	23	12	6	0	66	32	3	0	1	92	20	1	17	128	65	2	468	5278
8:30 AM	18	21	7	0	65	40	1	0	0	77	11	0	9	87	30	0	366	5230
8:35 AM	17	13	5	0	55	36	2	0	2	50	10	2	13	127	40	0	372	5155
8:40 AM	17	15	5	0	61	30	1	0	2	70	14	1	13	100	43	1	373	5033
8:45 AM	8	11	8	0	47	39	0	0	1	59	9	0	10	84	43	0	319	4906
8:50 AM	14	22	11	0	52	30	4	0	0	62	14	0	12	112	42	0	375	4798
8:55 AM	21	13	13	0	43	35	2	0	5	56	7	0	12	79	42	0	328	4661
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	240	196	200	0	820	540	32	0	40	1272	240	0	272	1332	504	8	5696	
Heavy Trucks	4	8	4		28	4	0		8	60	12		0	28	4		160	
Pedestrians		0				0				0				4			4	
Bicycles	0	0	0		0	1	0		0	0	0		0	0	1		2	
Railroad																		
Stopped Buses																		

Comments:

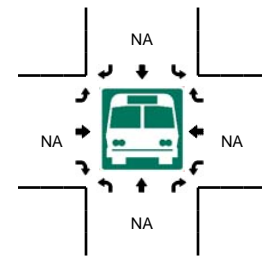
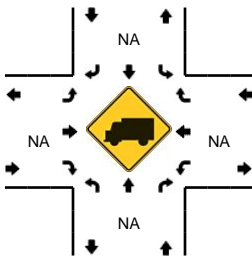
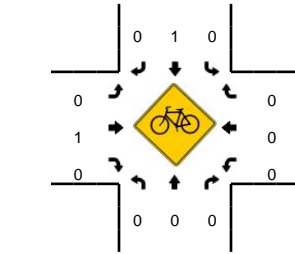
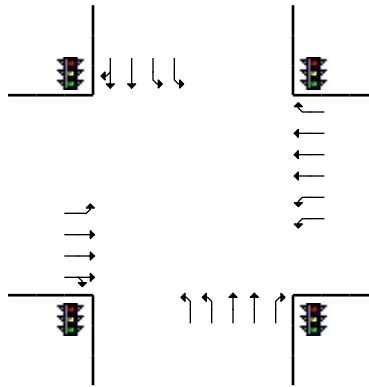
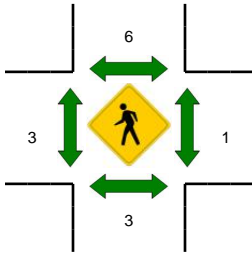
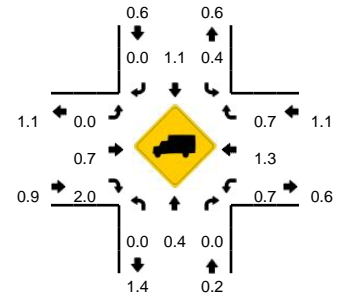
**LOCATION:** Rose Dr -- Imperial Hwy  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 177

**QC JOB #:** 14106290  
**DATE:** Thu, Feb 09 2017



**Peak-Hour: 4:45 PM -- 5:45 PM**  
**Peak 15-Min: 5:10 PM -- 5:25 PM**



5-Min Count Period Beginning At	Rose Dr (Northbound)				Rose Dr (Southbound)				Imperial Hwy (Eastbound)				Imperial Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:15 PM	23	37	9	0	58	16	3	0	1	91	20	1	16	89	56	1	421	5004
4:20 PM	17	24	11	0	65	31	1	0	7	120	21	1	14	112	53	0	477	5041
4:25 PM	28	35	7	0	67	31	4	0	4	91	21	0	14	95	54	2	453	5090
4:30 PM	17	20	6	0	60	34	1	0	5	103	18	1	10	106	50	0	431	5106
4:35 PM	22	38	7	0	62	30	2	0	4	113	24	0	14	93	70	0	479	5227
4:40 PM	16	30	6	0	60	35	1	0	7	126	11	0	3	135	48	0	478	5276
4:45 PM	19	51	7	0	62	23	4	0	1	122	20	0	17	73	52	2	453	5308
4:50 PM	16	30	9	0	69	27	0	0	9	144	23	1	5	151	62	0	546	5407
4:55 PM	16	47	6	0	61	25	3	0	4	112	19	0	13	94	60	0	460	5465
5:00 PM	23	29	8	0	59	30	4	0	2	119	21	0	13	131	46	0	485	5546
5:05 PM	16	44	7	0	56	26	1	0	3	125	27	1	9	108	50	3	476	5602
5:10 PM	14	29	10	0	65	36	1	0	6	133	26	2	6	110	61	1	500	5659
5:15 PM	28	48	11	0	57	25	3	0	2	105	14	0	15	98	59	1	466	5704
5:20 PM	20	32	17	0	72	43	2	0	0	156	23	1	14	115	71	0	566	5793
5:25 PM	22	42	5	0	67	26	2	0	5	130	19	0	11	105	64	0	498	5838
5:30 PM	15	28	6	0	70	24	3	0	2	125	19	0	12	102	46	1	453	5860
5:35 PM	23	43	10	0	65	29	1	0	3	102	19	0	6	109	47	1	458	5839
5:40 PM	28	35	8	0	69	40	2	0	4	116	19	1	10	137	52	0	521	5882
5:45 PM	23	50	2	0	52	31	5	0	5	109	29	0	15	83	43	3	450	5879
5:50 PM	27	33	10	0	67	23	6	0	18	112	15	2	10	94	59	0	476	5809
5:55 PM	41	48	7	0	62	26	4	0	6	106	17	2	9	84	52	0	464	5813
6:00 PM	15	16	8	0	58	33	2	0	0	102	11	0	9	121	35	1	411	5739
6:05 PM	20	39	6	0	54	17	1	0	8	96	13	1	11	74	41	2	383	5646
6:10 PM	25	37	6	0	56	28	3	0	2	108	20	2	12	109	54	0	462	5608
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	248	436	152	0	776	416	24	0	32	1576	252	12	140	1292	764	8	6128	
Heavy Trucks	0	0	0		0	4	0		0	8	4		0	8	0		24	
Pedestrians		0				8				0				4			12	
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1	
Railroad																		
Stopped Buses																		

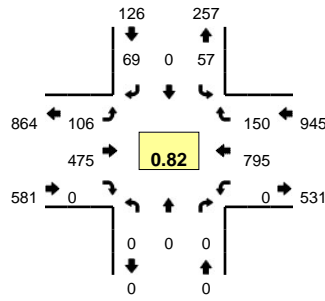
Comments:

**LOCATION:** Rose Dr/Tustin Ave -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

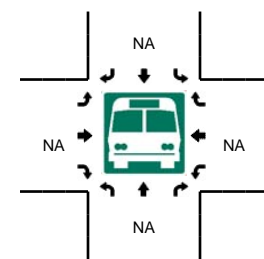
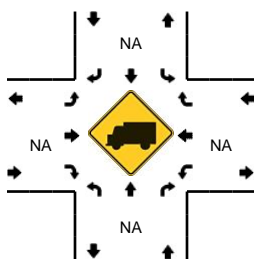
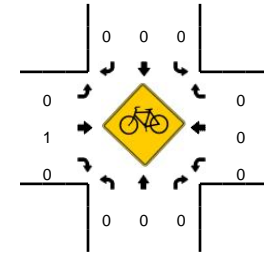
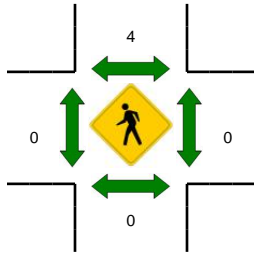
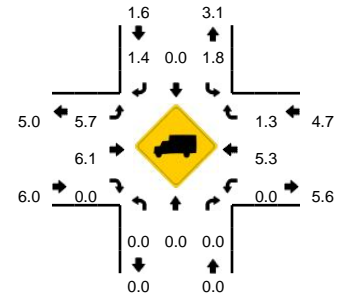
**CLIENT ID:** 178

**QC JOB #:** 14106291

**DATE:** Tue, Mar 07 2017



**Peak-Hour: 7:20 AM -- 8:20 AM**  
**Peak 15-Min: 7:40 AM -- 7:55 AM**



5-Min Count Period Beginning At	Rose Dr/Tustin Ave (Northbound)				Rose Dr/Tustin Ave (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:50 AM	0	0	0	0	4	0	0	0	6	31	0	0	0	41	11	0	93	
6:55 AM	0	0	0	0	1	0	3	0	10	17	0	0	0	45	10	0	86	742
7:00 AM	0	0	0	0	0	0	5	0	5	22	0	0	0	42	10	0	84	789
7:05 AM	0	0	0	0	3	0	6	0	8	21	0	0	0	52	6	0	96	841
7:10 AM	0	0	0	0	6	0	4	0	13	24	0	0	0	32	6	0	85	891
7:15 AM	0	0	0	0	2	0	3	0	5	26	0	0	0	48	11	0	95	949
7:20 AM	0	0	0	0	6	0	2	0	8	30	0	0	0	58	24	0	128	1024
7:25 AM	0	0	0	0	2	0	3	0	4	34	0	0	0	57	18	0	118	1092
7:30 AM	0	0	0	0	4	0	6	0	8	34	0	0	0	58	7	0	117	1138
7:35 AM	0	0	0	0	3	0	6	0	13	43	0	0	0	79	5	0	149	1207
7:40 AM	0	0	0	0	7	0	7	0	8	64	0	0	0	71	15	0	172	1294
7:45 AM	0	0	0	0	3	0	9	0	5	48	0	0	0	85	13	0	163	1386
7:50 AM	0	0	0	0	2	0	5	0	7	48	0	0	0	98	9	0	169	1462
7:55 AM	0	0	0	0	7	0	10	1	16	52	0	0	0	65	13	0	164	1540
8:00 AM	0	0	0	0	7	0	8	0	7	41	0	0	0	76	18	0	157	1613
8:05 AM	0	0	0	0	3	0	3	0	15	28	0	0	0	36	7	0	92	1609
8:10 AM	0	0	0	0	8	0	6	0	9	24	0	0	0	63	8	0	118	1642
8:15 AM	0	0	0	0	4	0	4	0	6	29	0	0	0	49	13	0	105	1652
8:20 AM	0	0	0	0	4	0	5	0	10	31	0	0	0	38	17	0	105	1629
8:25 AM	0	0	0	0	2	0	5	0	7	28	0	0	0	41	5	0	88	1599
8:30 AM	0	0	0	0	4	0	7	1	13	27	0	0	0	32	5	0	89	1571
8:35 AM	0	0	0	0	7	0	2	0	14	41	0	0	0	36	14	0	114	1536
8:40 AM	0	0	0	0	4	0	1	0	6	26	0	0	0	33	10	0	80	1444
8:45 AM	0	0	0	0	5	0	6	0	7	37	0	0	0	62	11	0	128	1409
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	48	0	84	0	80	640	0	0	0	1016	148	0	2016	
Heavy Trucks	0	0	0	0	0	0	0	0	0	40	0	0	0	40	0	0	80	
Pedestrians	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

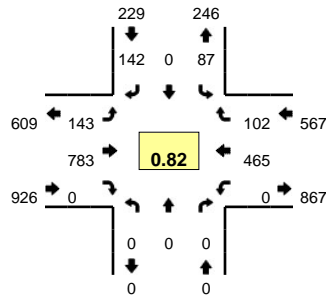
Comments:

**LOCATION:** Rose Dr/Tustin Ave -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

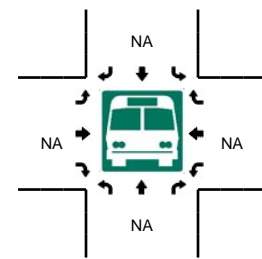
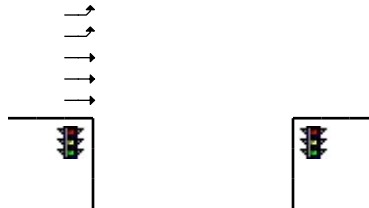
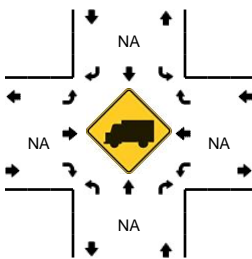
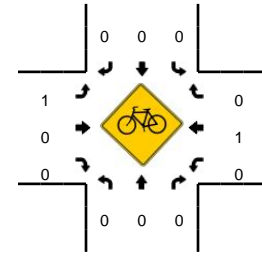
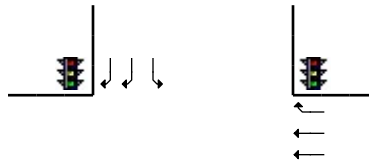
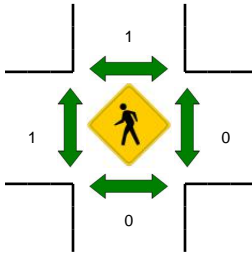
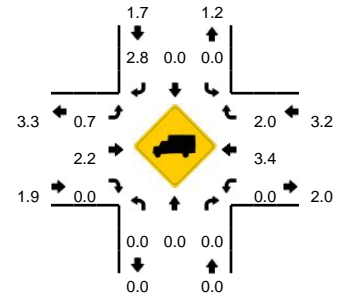
**CLIENT ID:** 178

**QC JOB #:** 14106292

**DATE:** Tue, Feb 07 2017



**Peak-Hour: 4:35 PM -- 5:35 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**



5-Min Count Period Beginning At	Rose Dr/Tustin Ave (Northbound)				Rose Dr/Tustin Ave (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	0	0	0	0	5	0	3	2	8	45	0	0	0	25	8	0	96	1243
4:10 PM	0	0	0	0	9	0	10	0	6	59	0	0	0	44	9	0	137	1286
4:15 PM	0	0	0	0	7	0	8	0	9	57	0	0	0	19	9	0	109	1284
4:20 PM	0	0	0	0	5	0	4	0	5	36	0	0	0	39	17	0	106	1299
4:25 PM	0	0	0	0	10	0	4	0	6	45	0	0	0	32	4	0	101	1318
4:30 PM	0	0	0	0	2	0	8	0	8	48	0	0	0	31	5	0	102	1329
4:35 PM	0	0	0	0	9	0	10	0	12	59	0	0	0	36	7	0	133	1339
4:40 PM	0	0	0	0	4	0	10	0	10	71	0	1	0	52	6	0	154	1375
4:45 PM	0	0	0	0	3	0	16	0	9	69	0	0	0	43	10	0	150	1427
4:50 PM	0	0	0	0	6	0	7	0	10	62	0	0	0	34	9	0	128	1441
4:55 PM	0	0	0	0	7	0	12	0	8	40	0	1	0	34	11	0	113	1451
5:00 PM	0	0	0	0	4	0	9	0	8	41	0	0	0	30	3	0	95	1424
5:05 PM	0	0	0	0	1	0	15	0	22	95	0	0	0	49	7	0	189	1517
5:10 PM	0	0	0	0	11	0	10	0	6	89	0	0	0	56	10	0	182	1562
5:15 PM	0	0	0	0	7	0	17	1	20	69	0	0	0	32	8	0	154	1607
5:20 PM	0	0	0	0	11	0	11	1	13	58	0	0	0	34	12	0	140	1641
5:25 PM	0	0	0	0	8	0	12	0	9	52	0	0	0	40	8	0	129	1669
5:30 PM	0	0	0	0	13	0	13	1	14	78	0	0	0	25	11	0	155	1722
5:35 PM	0	0	0	0	9	0	7	0	17	57	0	0	0	16	7	0	113	1702
5:40 PM	0	0	0	0	8	0	9	0	7	48	0	0	0	42	6	0	120	1668
5:45 PM	0	0	0	0	4	0	11	1	9	46	0	0	0	28	7	0	106	1624
5:50 PM	0	0	0	0	4	0	7	0	3	66	0	0	0	45	8	0	133	1629
5:55 PM	0	0	0	0	6	0	15	0	5	54	0	0	0	30	7	0	117	1633
6:00 PM	0	0	0	0	5	0	6	0	8	45	0	0	0	32	4	0	100	1638
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	76	0	168	4	192	1012	0	0	0	548	100	0	2100	
Heavy Trucks	0	0	0	0	0	0	4	0	0	20	0	0	0	28	4	0	56	
Pedestrians	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

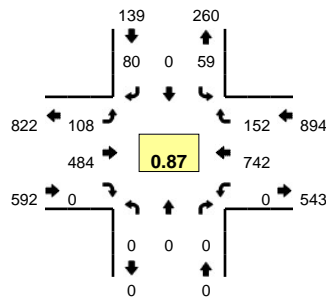
Comments:

**LOCATION:** Rose Dr/Tustin Ave -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

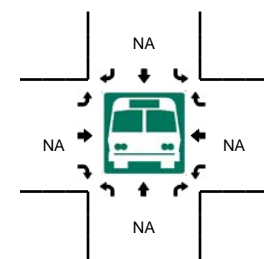
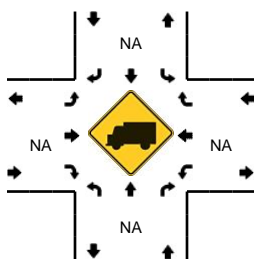
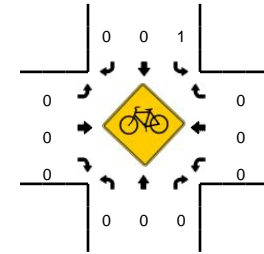
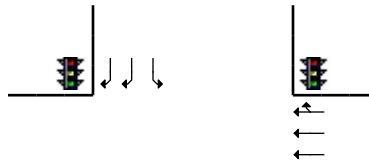
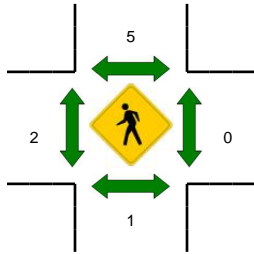
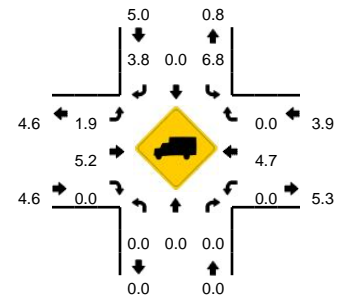
**CLIENT ID:** 178

**QC JOB #:** 14106293

**DATE:** Wed, Mar 08 2017



**Peak-Hour: 7:20 AM -- 8:20 AM**  
**Peak 15-Min: 7:35 AM -- 7:50 AM**



5-Min Count Period Beginning At	Rose Dr/Tustin Ave (Northbound)				Rose Dr/Tustin Ave (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:50 AM	0	0	0	0	1	0	3	1	8	27	0	0	0	48	7	0	95	
6:55 AM	0	0	0	0	2	0	0	0	14	28	0	0	0	42	7	0	93	780
7:00 AM	0	0	0	0	1	0	5	0	3	29	0	0	0	41	14	0	93	843
7:05 AM	0	0	0	0	5	0	5	0	6	29	0	0	0	39	9	0	93	894
7:10 AM	0	0	0	0	2	0	5	0	7	20	0	0	0	42	2	0	78	928
7:15 AM	0	0	0	0	2	0	2	0	7	23	0	0	0	52	7	0	93	977
7:20 AM	0	0	0	0	12	0	7	0	4	30	0	0	0	55	19	0	127	1056
7:25 AM	0	0	0	0	2	0	5	0	9	41	0	0	0	55	14	0	126	1116
7:30 AM	0	0	0	0	4	0	6	0	8	35	0	0	0	59	28	0	140	1191
7:35 AM	0	0	0	0	10	0	9	0	4	46	0	0	0	98	9	0	176	1285
7:40 AM	0	0	0	0	3	0	5	0	14	38	0	0	0	67	10	0	137	1343
7:45 AM	0	0	0	0	1	0	7	0	8	54	0	0	0	69	14	0	153	1404
7:50 AM	0	0	0	0	3	0	6	0	10	53	0	0	0	76	12	0	160	1469
7:55 AM	0	0	0	0	3	0	7	0	8	44	0	0	0	67	11	0	140	1516
8:00 AM	0	0	0	0	7	0	7	0	13	42	0	0	0	63	13	0	145	1568
8:05 AM	0	0	0	0	4	0	5	0	9	33	0	0	0	39	6	0	96	1571
8:10 AM	0	0	0	0	6	0	10	0	11	31	0	0	0	47	9	0	114	1607
8:15 AM	0	0	0	0	4	0	6	0	10	37	0	0	0	47	7	0	111	1625
8:20 AM	0	0	0	0	2	0	3	0	5	30	0	0	0	37	9	0	86	1584
8:25 AM	0	0	0	0	5	0	6	0	9	44	0	0	0	71	12	0	147	1605
8:30 AM	0	0	0	0	1	0	3	1	12	33	0	0	0	38	15	0	103	1568
8:35 AM	0	0	0	0	4	0	12	0	8	34	0	0	0	38	13	0	109	1501
8:40 AM	0	0	0	0	7	0	8	0	7	28	0	0	0	36	17	0	103	1467
8:45 AM	0	0	0	0	4	0	3	0	8	34	0	0	0	41	15	0	105	1419
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	56	0	84	0	104	552	0	0	0	936	132	0	1864	
Heavy Trucks	0	0	0	0	4	0	0	0	0	20	0	0	0	48	0	0	72	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

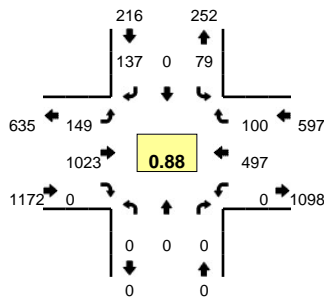
Comments:

**LOCATION:** Rose Dr/Tustin Ave -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

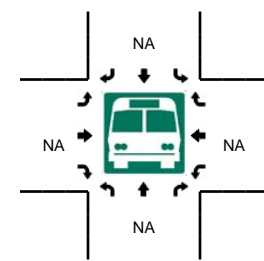
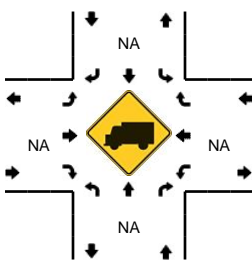
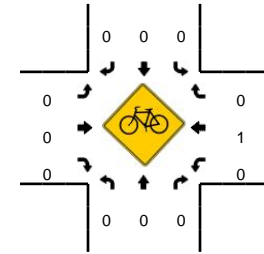
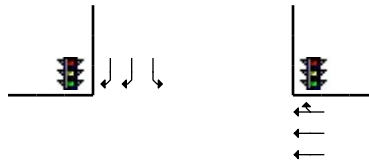
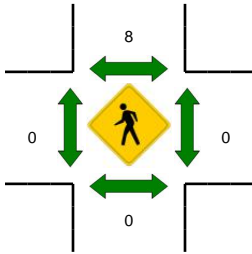
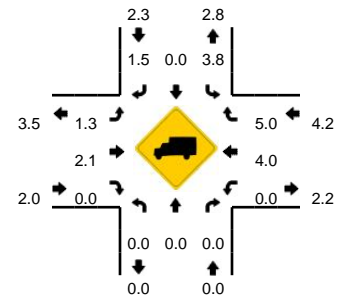
**CLIENT ID:** 178

**QC JOB #:** 14106294

**DATE:** Wed, Mar 08 2017



**Peak-Hour: 4:45 PM -- 5:45 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**



5-Min Count Period Beginning At	Rose Dr/Tustin Ave (Northbound)				Rose Dr/Tustin Ave (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:15 PM	0	0	0	0	5	0	11	0	9	55	0	0	0	39	8	0	127	1459
4:20 PM	0	0	0	0	7	0	8	1	13	50	0	0	0	38	13	0	130	1482
4:25 PM	0	0	0	0	10	0	13	0	4	67	0	0	0	43	13	0	150	1520
4:30 PM	0	0	0	0	4	0	9	0	7	62	0	1	0	32	5	0	120	1538
4:35 PM	0	0	0	0	7	0	12	0	12	59	0	0	0	27	13	0	130	1557
4:40 PM	0	0	0	0	5	0	11	1	7	48	0	0	0	30	3	0	105	1521
4:45 PM	0	0	0	0	4	0	12	0	19	95	0	0	0	49	7	0	186	1527
4:50 PM	0	0	0	0	5	0	12	0	5	71	0	0	0	42	11	0	146	1584
4:55 PM	0	0	0	0	5	0	5	0	12	79	0	0	0	33	7	0	141	1582
5:00 PM	0	0	0	0	7	0	11	1	10	89	0	0	0	25	8	0	151	1629
5:05 PM	0	0	0	0	3	0	8	0	17	93	0	0	0	51	11	0	183	1699
5:10 PM	0	0	0	0	6	0	14	1	14	87	0	0	0	46	9	0	177	1746
5:15 PM	0	0	0	0	7	0	14	1	12	93	0	0	0	60	18	0	205	1824
5:20 PM	0	0	0	0	10	0	8	1	12	68	0	1	0	26	7	0	133	1827
5:25 PM	0	0	0	0	2	0	8	0	9	73	0	0	0	48	6	0	146	1823
5:30 PM	0	0	0	0	7	0	11	0	14	95	0	0	0	37	5	0	169	1872
5:35 PM	0	0	0	0	11	0	14	0	16	80	0	0	0	38	5	0	164	1906
5:40 PM	0	0	0	0	8	0	20	0	8	100	0	0	0	42	6	0	184	1985
5:45 PM	0	0	0	0	3	0	10	1	16	75	0	0	0	29	9	0	143	1942
5:50 PM	0	0	0	0	9	0	11	1	15	92	0	0	0	35	8	0	171	1967
5:55 PM	0	0	0	0	5	0	11	2	17	76	0	0	0	30	6	0	147	1973
6:00 PM	0	0	0	0	0	0	11	0	8	74	0	0	0	44	9	0	146	1968
6:05 PM	0	0	0	0	6	0	7	1	10	52	0	0	0	35	6	0	117	1902
6:10 PM	0	0	0	0	5	0	9	1	10	59	0	0	0	28	8	0	120	1845
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	64	0	144	8	172	1092	0	0	0	628	152	0	2260	
Heavy Trucks	0	0	0	0	4	0	4	0	4	24	0	0	0	20	8	0	64	
Pedestrians	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	16	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

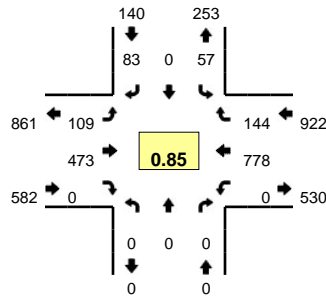


**LOCATION:** Rose Dr/Tustin Ave -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

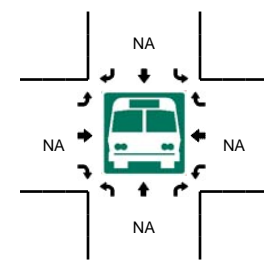
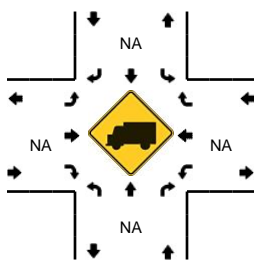
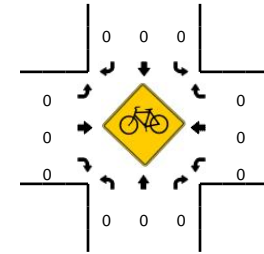
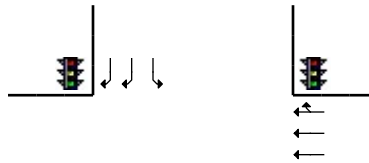
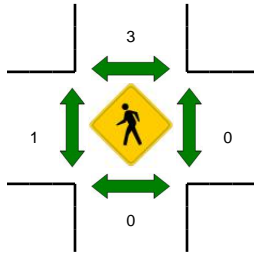
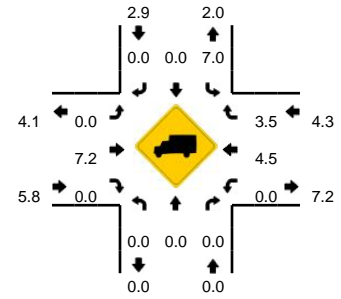
**CLIENT ID:** 178

**QC JOB #:** 14106295

**DATE:** Thu, Mar 09 2017



**Peak-Hour: 7:15 AM -- 8:15 AM**  
**Peak 15-Min: 7:35 AM -- 7:50 AM**



5-Min Count Period Beginning At	Rose Dr/Tustin Ave (Northbound)				Rose Dr/Tustin Ave (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:45 AM	0	0	0	0	1	0	1	0	7	30	0	0	0	38	7	0	84	
6:50 AM	0	0	0	0	2	0	5	0	5	25	0	0	0	36	5	0	78	
6:55 AM	0	0	0	0	3	0	6	0	10	25	0	0	0	50	9	0	103	751
7:00 AM	0	0	0	0	6	0	3	0	8	24	0	0	0	31	8	0	80	795
7:05 AM	0	0	0	0	3	0	3	0	7	28	0	0	0	41	8	0	90	846
7:10 AM	0	0	0	0	4	0	5	0	8	18	0	0	0	39	6	0	80	883
7:15 AM	0	0	0	0	6	0	7	0	9	30	0	0	0	55	10	0	117	964
7:20 AM	0	0	0	0	4	0	5	0	4	32	0	0	0	56	6	0	107	1015
7:25 AM	0	0	0	0	3	0	2	0	10	45	0	0	0	64	7	0	131	1095
7:30 AM	0	0	0	0	2	0	6	0	11	40	0	0	0	65	11	0	135	1161
7:35 AM	0	0	0	0	6	0	6	0	7	37	0	0	0	73	13	0	142	1232
7:40 AM	0	0	0	0	6	0	14	0	9	52	0	0	0	84	8	0	173	1320
7:45 AM	0	0	0	0	3	0	3	0	11	50	0	0	0	90	13	0	170	1406
7:50 AM	0	0	0	0	4	0	11	0	11	37	0	0	0	61	16	0	140	1468
7:55 AM	0	0	0	0	4	0	7	0	11	58	0	0	0	77	16	0	173	1538
8:00 AM	0	0	0	0	7	0	4	0	5	34	0	0	0	77	15	0	142	1600
8:05 AM	0	0	0	0	3	0	9	0	11	28	0	0	0	35	13	0	99	1609
8:10 AM	0	0	0	0	9	0	9	0	10	30	0	0	0	41	16	0	115	1644
8:15 AM	0	0	0	0	3	0	9	0	9	20	0	0	0	48	10	0	99	1626
8:20 AM	0	0	0	0	3	0	4	0	8	31	0	0	0	51	6	0	103	1622
8:25 AM	0	0	0	0	6	0	3	1	8	21	0	0	0	36	3	0	78	1569
8:30 AM	0	0	0	0	10	0	6	0	5	38	0	0	0	37	4	0	100	1534
8:35 AM	0	0	0	0	2	0	5	0	4	35	0	0	0	42	8	0	96	1488
8:40 AM	0	0	0	0	3	0	4	0	6	30	0	0	0	34	10	0	87	1402
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	60	0	92	0	108	556	0	0	0	988	136	0	1940	
Heavy Trucks	0	0	0	0	0	0	0	0	0	40	0	0	0	44	4	0	88	
Pedestrians	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

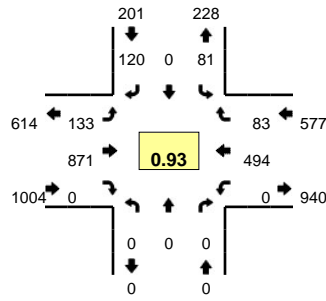
Comments:

**LOCATION:** Rose Dr/Tustin Ave -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

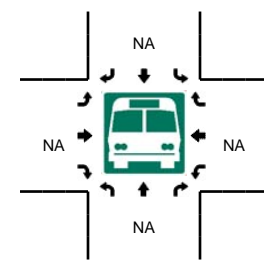
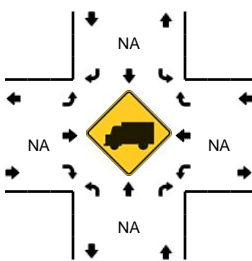
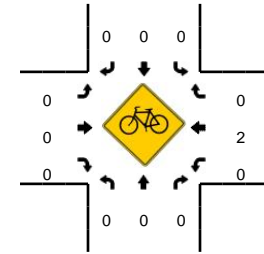
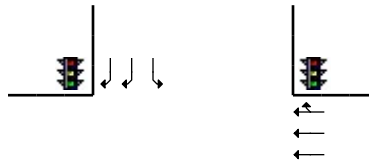
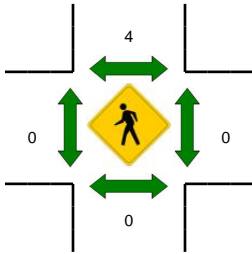
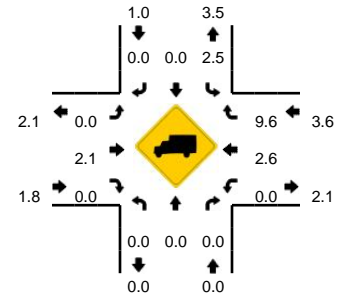
**CLIENT ID:** 178

**QC JOB #:** 14106296

**DATE:** Thu, Mar 09 2017



**Peak-Hour: 4:55 PM -- 5:55 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**

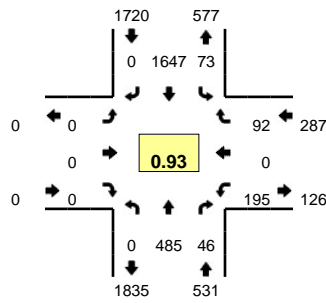


5-Min Count Period Beginning At	Rose Dr/Tustin Ave (Northbound)				Rose Dr/Tustin Ave (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:25 PM	0	0	0	0	3	0	7	0	8	61	0	0	0	39	8	0	126	1411
4:30 PM	0	0	0	0	7	0	8	1	13	60	0	0	0	27	5	0	121	1433
4:35 PM	0	0	0	0	6	0	6	0	16	79	0	0	0	33	13	0	153	1470
4:40 PM	0	0	0	0	11	0	18	1	11	66	0	0	0	50	11	0	168	1540
4:45 PM	0	0	0	0	5	0	8	1	10	51	0	0	0	52	8	0	135	1568
4:50 PM	0	0	0	0	8	0	11	1	10	65	0	0	0	32	7	0	134	1567
4:55 PM	0	0	0	0	2	0	9	1	7	89	0	0	0	20	5	0	133	1570
5:00 PM	0	0	0	0	13	0	5	1	14	71	0	0	0	28	9	0	141	1607
5:05 PM	0	0	0	0	3	0	5	0	8	82	0	0	0	60	4	0	162	1623
5:10 PM	0	0	0	0	7	0	12	0	6	66	0	0	0	58	12	0	161	1663
5:15 PM	0	0	0	0	7	0	13	4	19	75	0	0	0	35	5	0	158	1708
5:20 PM	0	0	0	0	6	0	14	0	14	66	0	0	0	43	11	0	154	1746
5:25 PM	0	0	0	0	4	0	15	0	8	75	0	0	0	30	5	0	137	1757
5:30 PM	0	0	0	0	4	0	7	1	10	75	0	0	0	36	8	0	141	1777
5:35 PM	0	0	0	0	7	0	13	0	13	67	0	0	0	43	6	0	149	1773
5:40 PM	0	0	0	0	9	0	12	1	11	76	0	0	0	41	5	0	155	1760
5:45 PM	0	0	0	0	5	0	6	3	11	63	0	0	0	54	8	0	150	1775
5:50 PM	0	0	0	0	2	0	9	1	12	66	0	0	0	46	5	0	141	1782
5:55 PM	0	0	0	0	6	0	9	0	13	68	0	0	0	28	4	0	128	1777
6:00 PM	0	0	0	0	8	0	18	0	14	45	0	0	0	31	12	0	128	1764
6:05 PM	0	0	0	0	3	0	9	0	14	73	0	0	0	21	1	0	121	1723
6:10 PM	0	0	0	0	5	0	12	0	14	74	0	0	0	44	4	0	153	1715
6:15 PM	0	0	0	0	2	0	5	1	9	53	0	0	0	37	11	0	118	1675
6:20 PM	0	0	0	0	4	0	9	0	4	51	0	0	0	27	4	0	99	1620
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	68	0	120	16	132	892	0	0	0	612	84	0	1924	
Heavy Trucks	0	0	0	0	0	0	0	0	0	28	0	0	0	16	4	0	48	
Pedestrians	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
Railroad																		
Stopped Buses																		

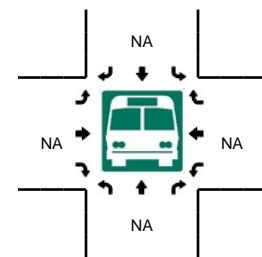
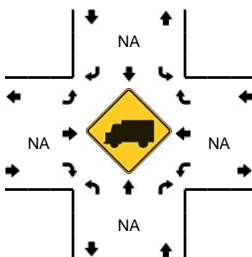
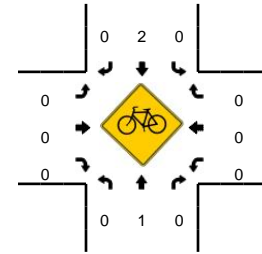
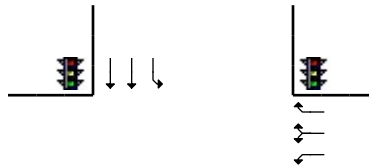
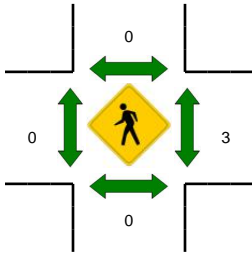
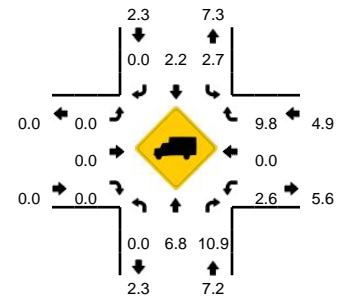
Comments:

**LOCATION:** 178B - Rose Dr -- Del Cerro Dr  
**CITY/STATE:** Yorba Linda, CA

**QC JOB #:** 141062147  
**DATE:** Tue, Jun 13 2017



**Peak-Hour: 7:05 AM -- 8:05 AM**  
**Peak 15-Min: 7:50 AM -- 8:05 AM**

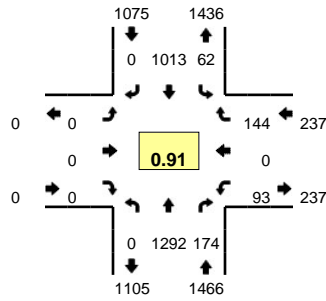


5-Min Count Period Beginning At	178B - Rose Dr (Northbound)				178B - Rose Dr (Southbound)				Del Cerro Dr (Eastbound)				Del Cerro Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:35 AM	0	31	3	0	1	100	0	0	0	0	0	0	16	0	3	0	154	
6:40 AM	0	25	6	0	3	123	0	0	0	0	0	0	11	0	7	0	175	
6:45 AM	0	29	0	0	2	128	0	1	0	0	0	0	17	0	4	0	181	
6:50 AM	0	21	5	0	1	111	0	0	0	0	0	0	13	0	4	0	155	
6:55 AM	0	29	4	0	5	123	0	0	0	0	0	0	11	0	4	0	176	1776
7:00 AM	0	18	4	0	2	123	0	0	0	0	0	0	13	0	5	0	165	1798
7:05 AM	0	40	2	0	2	121	0	0	0	0	0	0	10	0	4	0	179	1848
7:10 AM	0	29	4	0	6	146	0	0	0	0	0	0	6	0	5	0	196	1928
7:15 AM	0	30	4	0	8	127	0	0	0	0	0	0	13	0	5	0	187	1975
7:20 AM	0	47	3	0	4	123	0	0	0	0	0	0	24	0	3	1	205	2042
7:25 AM	0	54	5	0	6	145	0	0	0	0	0	0	9	0	10	0	229	2138
7:30 AM	0	43	3	0	5	114	0	0	0	0	0	0	24	0	6	1	196	2198
7:35 AM	0	35	4	0	8	156	0	0	0	0	0	0	17	0	4	1	225	2269
7:40 AM	0	49	6	0	10	137	0	0	0	0	0	0	10	0	11	2	225	2319
7:45 AM	0	40	5	0	4	128	0	0	0	0	0	0	28	0	7	0	212	2350
7:50 AM	0	39	3	0	9	134	0	0	0	0	0	0	19	0	11	0	215	2410
7:55 AM	0	30	2	0	3	145	0	0	0	0	0	0	19	0	16	2	217	2451
8:00 AM	0	49	5	0	8	171	0	0	0	0	0	0	9	0	10	0	252	2538
8:05 AM	0	40	4	0	6	114	0	0	0	0	0	0	6	0	4	1	175	2534
8:10 AM	0	41	3	0	7	102	0	0	0	0	0	0	15	0	3	1	172	2510
8:15 AM	0	62	6	0	3	98	0	0	0	0	0	0	13	0	7	1	190	2513
8:20 AM	0	47	5	0	7	149	0	0	0	0	0	0	17	0	5	0	230	2538
8:25 AM	0	30	1	0	3	125	0	0	0	0	0	0	15	0	10	0	184	2493
8:30 AM	0	40	4	0	6	138	0	0	0	0	0	0	10	0	5	0	203	2500
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	472	40	0	80	1800	0	0	0	0	0	0	188	0	148	8	2736	
Heavy Trucks	0	36	0	0	0	52	0	0	0	0	0	0	8	0	8	8	104	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

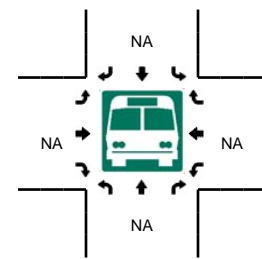
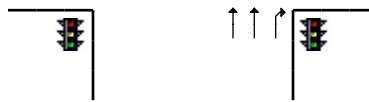
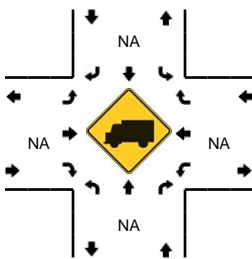
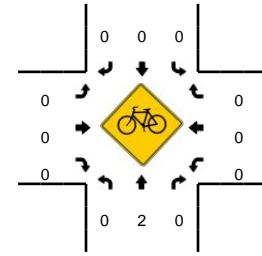
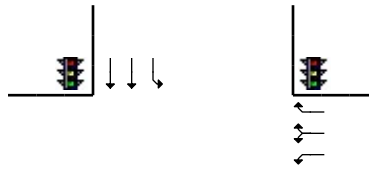
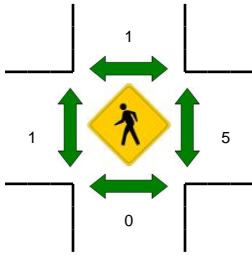
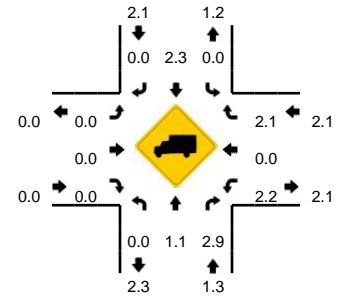
Comments:

**LOCATION:** 178B - Rose Dr -- Del Cerro Dr  
**CITY/STATE:** Yorba Linda, CA

**QC JOB #:** 141062148  
**DATE:** Tue, Jun 13 2017



**Peak-Hour: 4:55 PM -- 5:55 PM**  
**Peak 15-Min: 5:10 PM -- 5:25 PM**

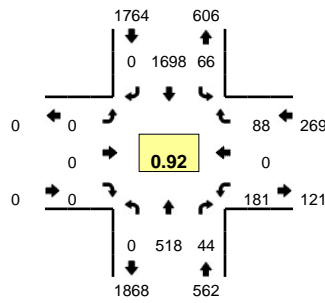


5-Min Count Period Beginning At	178B - Rose Dr (Northbound)				178B - Rose Dr (Southbound)				Del Cerro Dr (Eastbound)				Del Cerro Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:25 PM	0	85	8	0	3	43	0	0	0	0	0	0	6	0	15	1	161	2134
4:30 PM	0	63	8	0	5	79	0	0	0	0	0	0	10	0	15	0	180	2155
4:35 PM	0	73	8	0	9	74	0	0	0	0	0	0	6	0	10	0	180	2194
4:40 PM	0	110	8	0	7	70	0	0	0	0	0	0	7	0	9	0	211	2214
4:45 PM	0	79	5	0	0	70	0	0	0	0	0	0	9	0	10	0	173	2209
4:50 PM	0	92	11	0	8	62	0	0	0	0	0	0	9	0	13	0	195	2245
4:55 PM	0	95	12	0	4	91	0	0	0	0	0	0	7	0	12	0	221	2283
5:00 PM	0	97	17	0	3	62	0	0	0	0	0	0	14	0	24	0	217	2305
5:05 PM	0	107	9	0	5	84	0	0	0	0	0	0	14	0	22	0	241	2378
5:10 PM	0	143	14	0	3	85	0	0	0	0	0	0	1	0	6	0	252	2403
5:15 PM	0	107	12	0	3	105	0	0	0	0	0	0	7	0	14	0	248	2460
5:20 PM	0	109	15	0	4	118	0	0	0	0	0	0	6	0	10	1	263	2542
5:25 PM	0	94	27	0	5	66	0	0	0	0	0	0	11	0	11	0	214	2595
5:30 PM	0	108	8	0	6	65	0	0	0	0	0	0	5	0	9	0	201	2616
5:35 PM	0	102	18	0	10	97	0	0	0	0	0	0	4	0	12	0	243	2679
5:40 PM	0	107	10	0	3	67	0	0	0	0	0	0	7	0	7	0	201	2669
5:45 PM	0	136	19	0	6	91	0	0	0	0	0	0	7	0	12	0	271	2767
5:50 PM	0	87	13	0	10	82	0	0	0	0	0	0	9	0	5	0	206	2778
5:55 PM	0	103	8	0	8	52	0	0	0	0	0	0	5	0	13	1	190	2747
6:00 PM	0	85	9	0	7	51	0	0	0	0	0	0	2	0	10	3	167	2697
6:05 PM	0	113	8	0	6	79	0	0	0	0	0	0	8	0	12	0	226	2682
6:10 PM	0	99	12	0	7	45	0	0	0	0	0	0	5	0	10	0	178	2608
6:15 PM	0	97	9	0	4	68	0	0	0	0	0	0	9	0	14	0	201	2561
6:20 PM	0	101	11	0	4	49	0	0	0	0	0	0	6	0	12	1	184	2482
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1436	164	0	40	1232	0	0	0	0	0	0	56	0	120	4	3052	
Heavy Trucks	0	20	8		0	36	0		0	0	0		4	0	0		68	
Pedestrians		0				4				0				0			4	
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

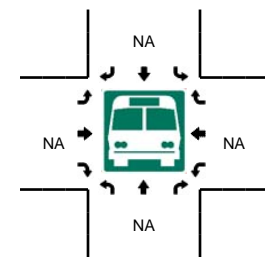
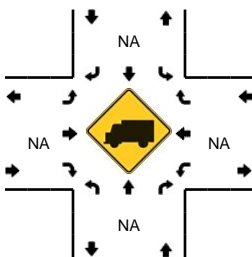
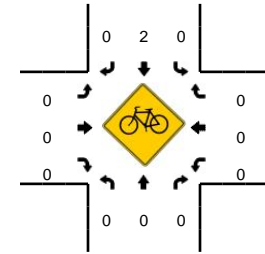
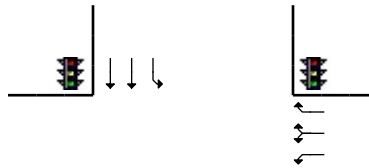
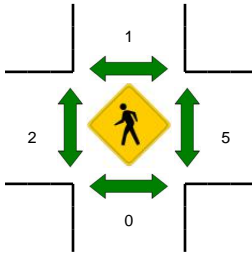
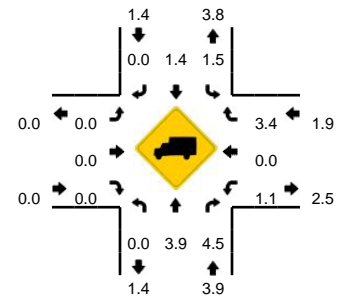
Comments:

**LOCATION:** 178B - Rose Dr -- Del Cerro Dr  
**CITY/STATE:** Yorba Linda, CA

**QC JOB #:** 141062149  
**DATE:** Wed, Jun 07 2017



**Peak-Hour: 7:25 AM -- 8:25 AM**  
**Peak 15-Min: 7:45 AM -- 8:00 AM**

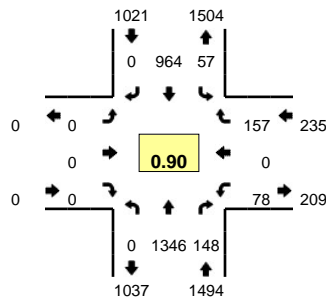


5-Min Count Period Beginning At	178B - Rose Dr (Northbound)				178B - Rose Dr (Southbound)				Del Cerro Dr (Eastbound)				Del Cerro Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:55 AM	0	29	2	0	3	131	0	0	0	0	0	0	13	0	4	0	182	1675
7:00 AM	0	24	5	0	3	130	0	0	0	0	0	0	17	0	0	1	180	1764
7:05 AM	0	24	1	0	9	141	0	0	0	0	0	0	9	0	2	1	187	1849
7:10 AM	0	25	2	0	7	152	0	0	0	0	0	0	9	0	3	0	198	1925
7:15 AM	0	40	4	0	2	128	0	0	0	0	0	0	14	0	6	0	194	1994
7:20 AM	0	32	1	0	4	139	0	0	0	0	0	0	9	0	3	0	188	2053
7:25 AM	0	40	4	0	5	132	0	0	0	0	0	0	9	0	9	1	200	2109
7:30 AM	0	39	2	0	3	151	0	0	0	0	0	0	9	0	7	2	213	2194
7:35 AM	0	45	2	0	3	143	0	0	0	0	0	0	17	0	10	1	221	2271
7:40 AM	0	52	4	0	6	163	0	0	0	0	0	0	10	0	4	1	240	2345
7:45 AM	0	51	2	0	11	137	0	0	0	0	0	0	21	0	7	1	230	2390
7:50 AM	0	35	9	0	7	147	0	0	0	0	0	0	20	0	8	1	227	2460
7:55 AM	0	42	4	0	11	163	0	0	0	0	0	0	16	0	12	0	248	2526
8:00 AM	0	51	4	0	5	134	0	0	0	0	0	0	22	0	8	1	225	2571
8:05 AM	0	22	3	0	3	138	0	0	0	0	0	0	14	0	5	1	186	2570
8:10 AM	0	56	2	0	2	140	0	0	0	0	0	0	7	0	9	0	216	2588
8:15 AM	0	34	3	0	5	125	0	0	0	0	0	0	14	0	4	1	186	2580
8:20 AM	0	51	5	0	5	125	0	0	0	0	0	0	11	0	5	1	203	2595
8:25 AM	0	43	6	0	0	100	0	0	0	0	0	0	15	0	4	0	168	2563
8:30 AM	0	36	1	0	4	119	0	0	0	0	0	0	15	0	5	1	181	2531
8:35 AM	0	32	2	0	0	125	0	0	0	0	0	0	15	0	9	0	183	2493
8:40 AM	0	32	4	1	2	114	0	0	0	0	0	0	16	0	8	1	178	2431
8:45 AM	0	37	6	0	6	97	0	0	0	0	0	0	5	0	6	1	158	2359
8:50 AM	0	53	6	0	6	92	0	0	0	0	0	0	5	0	5	0	167	2299
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	512	60	0	116	1788	0	0	0	0	0	0	228	0	108	8	2820	
Heavy Trucks	0	12	4		0	32	0		0	0	0		4	0	0		52	
Pedestrians		0				0				0				8				8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0			0
Railroad																		
Stopped Buses																		

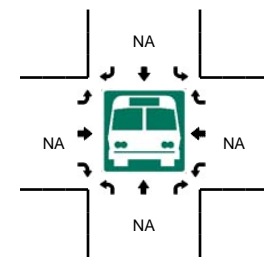
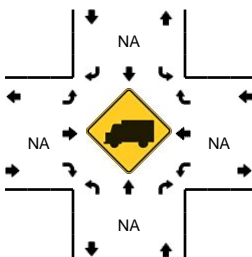
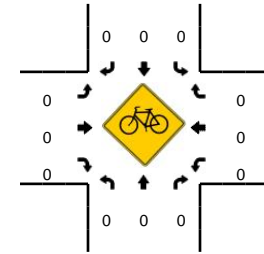
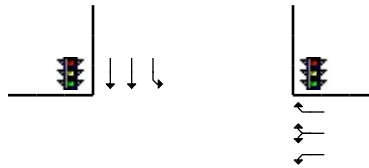
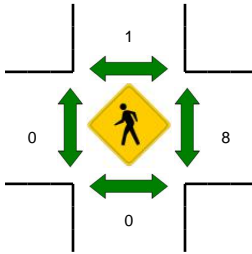
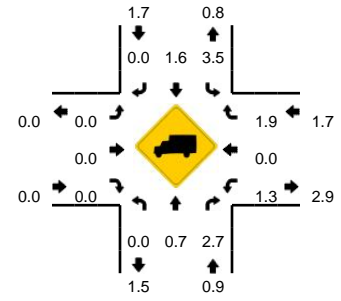
Comments:

**LOCATION:** 178B - Rose Dr -- Del Cerro Dr  
**CITY/STATE:** Yorba Linda, CA

**QC JOB #:** 141062150  
**DATE:** Wed, Jun 07 2017



**Peak-Hour: 4:40 PM -- 5:40 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**

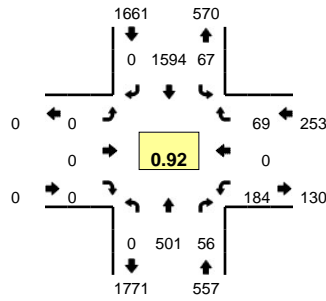


5-Min Count Period Beginning At	178B - Rose Dr (Northbound)				178B - Rose Dr (Southbound)				Del Cerro Dr (Eastbound)				Del Cerro Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:10 PM	0	93	14	0	4	87	0	0	0	0	0	0	5	0	5	1	209	2023
4:15 PM	0	102	4	0	2	63	0	0	0	0	0	0	3	0	9	0	183	2076
4:20 PM	0	63	10	0	5	63	0	0	0	0	0	0	6	0	8	1	156	2032
4:25 PM	0	82	13	1	7	71	0	0	0	0	0	0	8	0	14	0	196	2093
4:30 PM	0	101	12	0	7	48	0	0	0	0	0	0	7	0	19	0	194	2095
4:35 PM	0	87	14	0	5	83	0	0	0	0	0	0	5	0	10	0	204	2143
4:40 PM	0	81	8	0	4	107	0	0	0	0	0	0	5	0	11	0	216	2201
4:45 PM	0	126	15	0	3	58	0	0	0	0	0	0	7	0	8	0	217	2238
4:50 PM	0	85	7	0	4	92	0	0	0	0	0	0	4	0	9	1	202	2298
4:55 PM	0	107	7	0	5	87	0	0	0	0	0	0	7	0	11	0	224	2348
5:00 PM	0	110	8	0	6	58	0	0	0	0	0	0	7	0	14	1	204	2394
5:05 PM	0	124	14	0	3	87	0	0	0	0	0	0	5	0	15	1	249	2454
5:10 PM	0	128	17	0	5	83	0	1	0	0	0	0	7	0	20	0	261	2506
5:15 PM	0	124	20	0	5	85	0	0	0	0	0	0	7	0	17	0	258	2581
5:20 PM	0	123	12	0	5	65	0	0	0	0	0	0	4	0	9	2	220	2645
5:25 PM	0	105	14	0	7	104	0	0	0	0	0	0	8	0	11	0	249	2698
5:30 PM	0	109	13	0	5	58	0	0	0	0	0	0	6	0	15	0	206	2710
5:35 PM	0	124	13	0	4	80	0	0	0	0	0	0	6	0	17	0	244	2750
5:40 PM	0	90	13	0	3	79	0	0	0	0	0	0	6	0	13	0	204	2738
5:45 PM	0	94	16	0	7	53	0	0	0	0	0	0	7	0	16	1	194	2715
5:50 PM	0	99	5	0	5	52	0	0	0	0	0	0	9	0	7	1	178	2691
5:55 PM	0	107	10	0	6	61	0	0	0	0	0	0	3	0	14	0	201	2668
6:00 PM	0	114	8	0	11	53	0	0	0	0	0	0	2	0	9	0	197	2661
6:05 PM	0	82	6	0	5	51	0	0	0	0	0	0	5	0	14	0	163	2575
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1504	204	0	52	1020	0	4	0	0	0	0	76	0	208	4	3072	
Heavy Trucks	0	16	12		0	16	0		0	0	0		0	0	12		56	
Pedestrians		0				0				0				16				16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

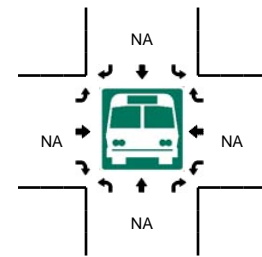
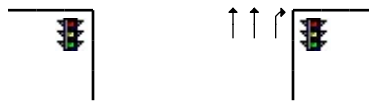
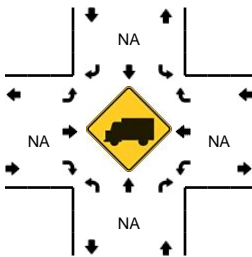
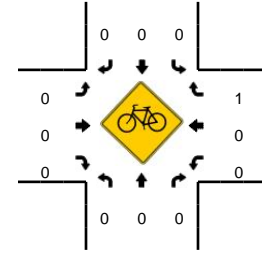
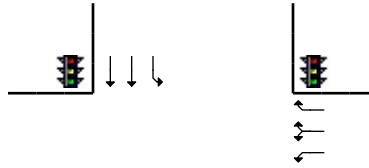
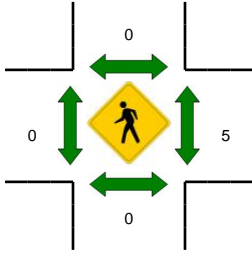
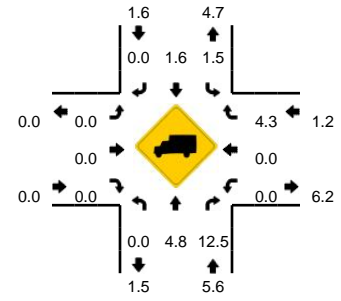
Comments:

**LOCATION:** 178B - Rose Dr -- Del Cerro Dr  
**CITY/STATE:** Yorba Linda, CA

**QC JOB #:** 141062145  
**DATE:** Thu, Jun 08 2017



**Peak-Hour: 7:05 AM -- 8:05 AM**  
**Peak 15-Min: 7:35 AM -- 7:50 AM**

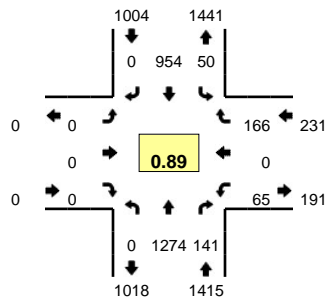


5-Min Count Period Beginning At	178B - Rose Dr (Northbound)				178B - Rose Dr (Southbound)				Del Cerro Dr (Eastbound)				Del Cerro Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:35 AM	0	25	2	0	2	127	0	0	0	0	0	0	12	0	6	1	175	
6:40 AM	0	26	1	0	0	103	0	0	0	0	0	0	17	0	3	0	150	
6:45 AM	0	34	3	0	0	108	0	0	0	0	0	0	18	0	3	0	166	
6:50 AM	0	35	5	0	2	117	0	0	0	0	0	0	10	0	2	0	171	
6:55 AM	0	33	6	0	4	114	0	0	0	0	0	0	8	0	1	0	166	1603
7:00 AM	0	24	4	0	2	110	0	0	0	0	0	0	13	0	3	0	156	1673
7:05 AM	0	29	6	0	4	151	0	0	0	0	0	0	21	0	2	2	215	1796
7:10 AM	0	31	1	0	4	109	0	0	0	0	0	0	18	0	5	0	168	1846
7:15 AM	0	44	1	0	3	164	0	0	0	0	0	0	11	0	3	0	226	1956
7:20 AM	0	44	4	0	4	109	0	0	0	0	0	0	19	0	4	1	185	2017
7:25 AM	0	27	3	0	2	133	0	0	0	0	0	0	16	0	7	1	189	2089
7:30 AM	0	44	7	0	3	109	0	0	0	0	0	0	20	0	9	0	192	2159
7:35 AM	0	61	5	0	6	135	0	0	0	0	0	0	13	0	8	2	230	2214
7:40 AM	0	50	3	0	9	146	0	0	0	0	0	0	15	0	4	0	227	2291
7:45 AM	0	39	5	0	10	150	0	0	0	0	0	0	3	0	6	0	213	2338
7:50 AM	0	44	9	0	11	129	0	0	0	0	0	0	11	0	9	0	213	2380
7:55 AM	0	36	9	0	5	120	0	0	0	0	0	0	16	0	8	1	195	2409
8:00 AM	0	52	3	0	6	139	0	0	0	0	0	0	14	0	4	0	218	2471
8:05 AM	0	47	2	0	5	123	0	0	0	0	0	0	20	0	4	2	203	2459
8:10 AM	0	38	5	0	4	81	0	0	0	0	0	0	10	0	6	0	144	2435
8:15 AM	0	37	2	0	3	126	0	0	0	0	0	0	17	0	4	1	190	2399
8:20 AM	0	28	3	0	5	115	0	0	0	0	0	0	18	0	5	1	175	2389
8:25 AM	0	70	4	0	6	124	0	0	0	0	0	0	15	0	5	0	224	2424
8:30 AM	0	48	1	0	5	98	0	0	0	0	0	0	11	0	5	0	168	2400
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	600	52	0	100	1724	0	0	0	0	0	0	124	0	72	8	2680	
Heavy Trucks	0	36	8		4	12	0		0	0	0		0	0	8		68	
Pedestrians		0				0				0				0				0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		0
Stopped Buses																		0

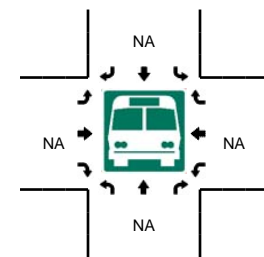
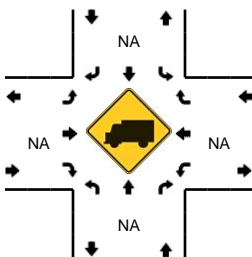
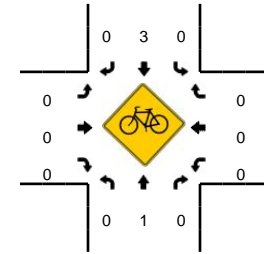
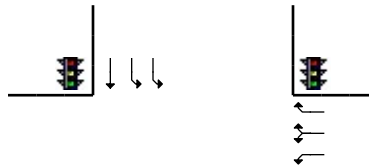
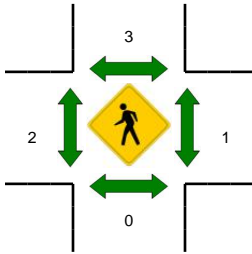
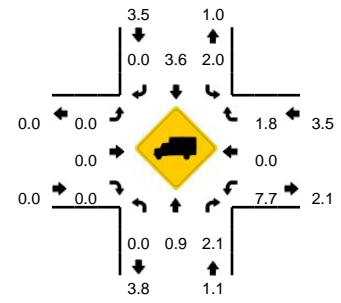
Comments:

**LOCATION:** 178B - Rose Dr -- Del Cerro Dr  
**CITY/STATE:** Yorba Linda, CA

**QC JOB #:** 141062146  
**DATE:** Thu, Jun 08 2017



**Peak-Hour: 4:50 PM -- 5:50 PM**  
**Peak 15-Min: 5:10 PM -- 5:25 PM**



5-Min Count Period Beginning At	178B - Rose Dr (Northbound)				178B - Rose Dr (Southbound)				Del Cerro Dr (Eastbound)				Del Cerro Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:20 PM	0	69	9	0	3	78	0	0	0	0	0	0	5	0	12	0	176	2142
4:25 PM	0	82	11	0	1	83	0	0	0	0	0	0	7	0	7	1	192	2175
4:30 PM	0	72	9	0	3	69	0	0	0	0	0	0	8	0	19	0	180	2186
4:35 PM	0	107	9	0	4	74	0	0	0	0	0	0	8	0	12	0	214	2227
4:40 PM	0	67	16	0	5	75	0	0	0	0	0	0	11	0	13	1	188	2233
4:45 PM	0	121	8	0	6	76	0	0	0	0	0	0	5	0	11	0	227	2289
4:50 PM	0	101	9	0	4	82	0	1	0	0	0	0	5	0	12	0	214	2370
4:55 PM	0	92	6	0	3	70	0	0	0	0	0	0	3	0	16	0	190	2361
5:00 PM	0	116	14	0	5	83	0	0	0	0	0	0	7	0	19	0	244	2412
5:05 PM	0	77	11	0	3	71	0	0	0	0	0	0	9	0	10	0	181	2416
5:10 PM	0	124	15	0	2	103	0	0	0	0	0	0	7	0	20	0	271	2487
5:15 PM	0	122	13	0	5	101	0	0	0	0	0	0	8	0	14	1	264	2541
5:20 PM	0	99	9	0	2	85	0	0	0	0	0	0	5	0	6	0	206	2571
5:25 PM	0	123	13	0	6	51	0	0	0	0	0	0	6	0	17	0	216	2595
5:30 PM	0	99	13	0	6	72	0	0	0	0	0	0	2	0	17	0	209	2624
5:35 PM	0	103	16	0	5	69	0	0	0	0	0	0	1	0	6	0	200	2610
5:40 PM	0	109	11	0	5	65	0	0	0	0	0	0	5	0	14	0	209	2631
5:45 PM	0	109	11	0	3	102	0	0	0	0	0	0	6	0	15	0	246	2650
5:50 PM	0	64	14	0	2	55	0	0	0	0	0	0	9	0	15	1	160	2596
5:55 PM	0	117	11	0	4	57	0	0	0	0	0	0	6	0	5	1	201	2607
6:00 PM	0	88	7	0	8	57	0	0	0	0	0	0	2	0	11	1	174	2537
6:05 PM	0	103	5	0	4	50	0	0	0	0	0	0	5	0	14	0	181	2537
6:10 PM	0	99	15	0	2	55	0	0	0	0	0	0	7	0	5	0	183	2449
6:15 PM	0	91	14	0	6	64	0	0	0	0	0	0	6	0	9	0	190	2375
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1380	148	0	36	1156	0	0	0	0	0	0	80	0	160	4	2964	
Heavy Trucks	0	8	4		0	32	0		0	0	0		4	0	0		48	
Pedestrians		0				4				4				4			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

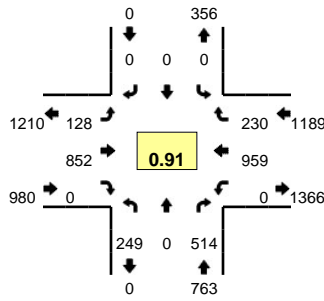
Comments:



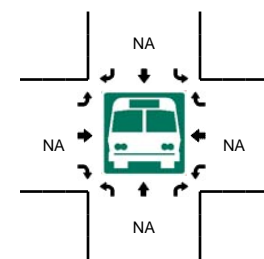
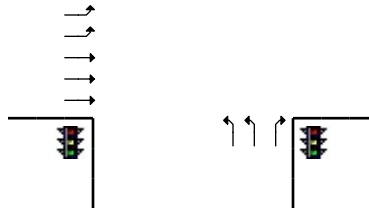
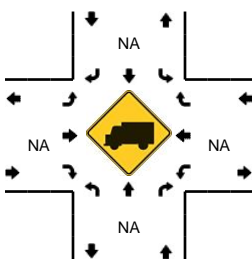
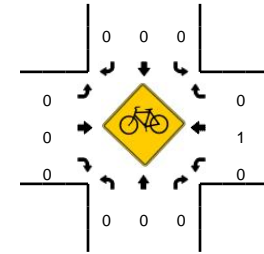
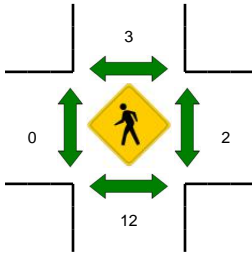
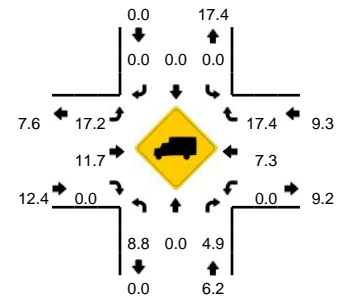
**LOCATION:** SR 57 NB Ramps -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 179

**QC JOB #:** 141063151  
**DATE:** Tue, Mar 07 2017



**Peak-Hour: 7:35 AM -- 8:35 AM**  
**Peak 15-Min: 7:55 AM -- 8:10 AM**



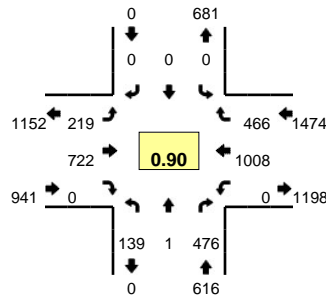
5-Min Count Period Beginning At	SR 57 NB Ramps (Northbound)				SR 57 NB Ramps (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	18	0	42	0	0	0	0	0	7	44	0	0	0	43	16	0	170	2103
7:05 AM	10	1	38	0	0	0	0	0	16	60	0	0	0	65	26	0	216	2193
7:10 AM	16	0	49	0	0	0	0	0	13	46	0	0	0	63	11	0	198	2251
7:15 AM	14	0	50	0	0	0	0	0	10	49	0	0	0	64	18	0	205	2302
7:20 AM	15	0	26	0	0	0	0	0	7	69	0	0	0	81	30	0	228	2367
7:25 AM	23	0	57	0	0	0	0	0	11	61	0	0	0	52	9	0	213	2435
7:30 AM	15	0	36	0	0	0	0	0	10	77	0	0	0	80	18	0	236	2504
7:35 AM	22	0	45	0	0	0	0	0	18	54	0	0	0	78	19	0	236	2588
7:40 AM	19	0	42	0	0	0	0	0	15	68	0	0	0	85	17	0	246	2602
7:45 AM	19	0	30	0	0	0	0	0	12	68	0	0	0	89	17	0	235	2610
7:50 AM	28	0	47	0	0	0	0	0	8	68	0	0	0	74	20	0	245	2643
7:55 AM	20	0	43	0	0	0	0	0	11	105	0	0	0	94	23	0	296	2724
8:00 AM	23	0	59	0	0	0	0	0	8	70	0	0	0	86	12	0	258	2812
8:05 AM	23	0	39	0	0	0	0	0	7	75	0	0	0	83	27	0	254	2850
8:10 AM	19	0	46	0	0	0	0	0	9	59	0	1	0	54	21	0	209	2861
8:15 AM	15	0	31	0	0	0	0	0	5	69	0	0	0	99	19	0	238	2894
8:20 AM	27	0	45	0	0	0	0	0	11	77	0	0	0	57	21	0	238	2904
8:25 AM	20	0	50	0	0	0	0	0	8	72	0	0	0	69	16	0	235	2926
8:30 AM	14	0	37	0	0	0	0	0	14	67	0	1	0	91	18	0	242	2932
8:35 AM	14	0	49	0	0	0	0	0	9	57	0	0	0	76	17	0	222	2918
8:40 AM	21	0	34	0	0	0	0	0	10	69	0	0	0	57	18	0	209	2881
8:45 AM	16	0	35	0	0	0	0	0	5	45	0	0	0	63	18	0	182	2828
8:50 AM	18	0	41	0	0	0	0	0	10	52	0	0	0	75	17	0	213	2796
8:55 AM	21	0	42	0	0	0	0	0	13	44	0	0	0	75	18	0	213	2713
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	264	0	564	0	0	0	0	0	104	1000	0	0	0	1052	248	0	3232	
Heavy Trucks	24	0	28	0	0	0	0	0	16	108	0	0	0	92	48	0	316	
Pedestrians		20				0				0				0			20	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

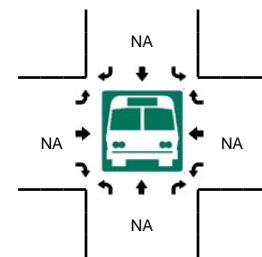
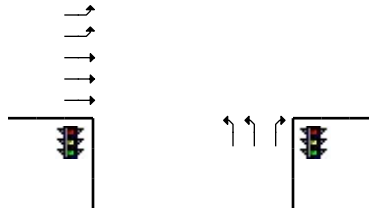
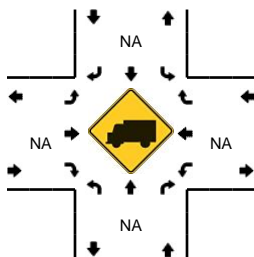
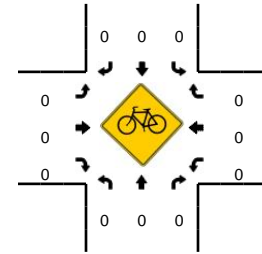
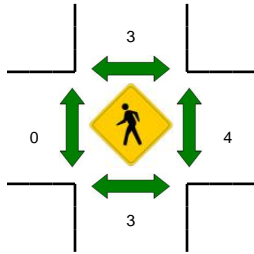
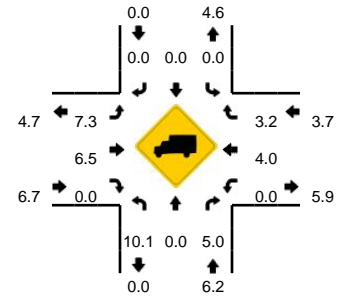
**LOCATION:** SR 57 NB Ramps -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 179

**QC JOB #:** 141063152  
**DATE:** Tue, Feb 07 2017



**Peak-Hour: 4:35 PM -- 5:35 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**



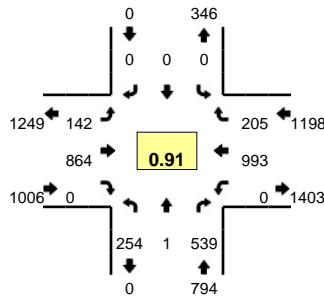
5-Min Count Period Beginning At	SR 57 NB Ramps (Northbound)				SR 57 NB Ramps (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	16	0	39	0	0	0	0	0	27	49	0	0	0	73	45	0	249	2862
4:10 PM	13	0	33	0	0	0	0	0	13	78	0	0	0	81	44	0	262	2872
4:15 PM	12	0	36	0	0	0	0	0	22	68	0	1	0	82	34	0	255	2898
4:20 PM	14	0	35	0	0	0	0	0	14	67	0	0	0	67	25	0	222	2908
4:25 PM	7	0	38	0	0	0	0	0	14	39	0	1	0	64	32	0	195	2894
4:30 PM	13	0	37	0	0	0	0	0	20	62	0	0	0	65	33	0	230	2931
4:35 PM	7	0	30	0	0	0	0	0	21	65	0	0	0	89	51	0	263	2933
4:40 PM	10	0	30	0	0	0	0	0	24	45	0	1	0	78	40	0	228	2892
4:45 PM	9	0	35	0	0	0	0	0	9	49	0	0	0	79	46	0	227	2868
4:50 PM	14	0	39	0	0	0	0	0	24	56	0	0	0	90	38	0	261	2883
4:55 PM	16	0	44	0	0	0	0	0	12	65	0	1	0	68	38	0	244	2896
5:00 PM	8	0	47	0	0	0	0	0	14	49	0	0	0	76	33	0	227	2863
5:05 PM	21	0	40	0	0	0	0	0	14	70	0	1	0	92	43	0	281	2895
5:10 PM	11	0	32	0	0	0	0	0	30	86	0	0	0	128	37	0	324	2957
5:15 PM	6	0	35	0	0	0	0	0	22	57	0	1	0	84	35	0	240	2942
5:20 PM	11	1	42	0	0	0	0	0	10	46	0	0	0	60	40	0	210	2930
5:25 PM	9	0	50	0	0	0	0	0	18	58	0	0	0	79	41	0	255	2990
5:30 PM	17	0	52	0	0	0	0	0	16	76	0	1	0	85	24	0	271	3031
5:35 PM	15	0	39	0	0	0	0	0	14	65	0	0	0	65	32	0	230	2998
5:40 PM	18	0	49	0	0	0	0	0	19	41	0	0	0	65	32	0	224	2994
5:45 PM	14	0	41	0	0	0	0	0	7	34	0	0	0	73	23	0	192	2959
5:50 PM	17	0	43	0	0	0	0	0	12	63	0	0	0	52	33	0	220	2918
5:55 PM	17	0	44	0	0	0	0	0	9	45	0	0	0	63	21	0	199	2873
6:00 PM	9	0	34	0	0	0	0	0	7	55	0	0	0	78	27	0	210	2856
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	152	0	428	0	0	0	0	0	264	852	0	8	0	1216	460	0	3380	
Heavy Trucks	8	0	8	0	0	0	0	0	8	48	0	0	0	40	8	0	120	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

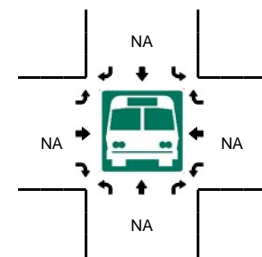
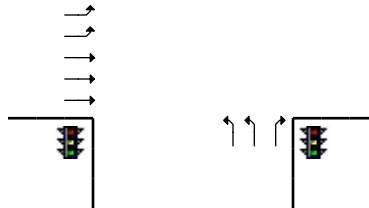
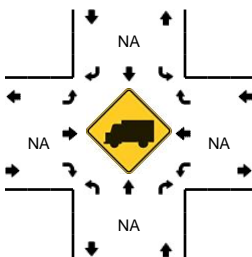
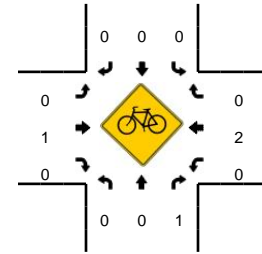
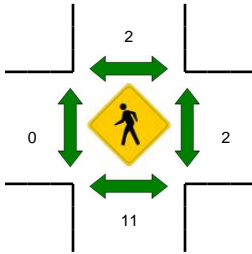
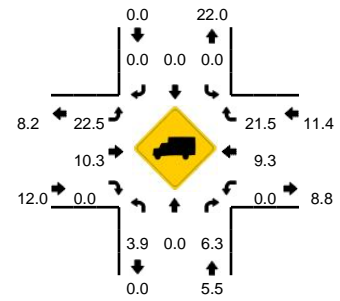
**LOCATION:** SR 57 NB Ramps -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 179

**QC JOB #:** 141063153  
**DATE:** Wed, Feb 08 2017



**Peak-Hour: 7:15 AM -- 8:15 AM**  
**Peak 15-Min: 7:50 AM -- 8:05 AM**



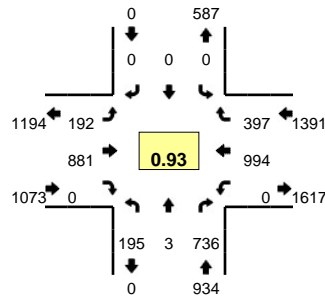
5-Min Count Period Beginning At	SR 57 NB Ramps (Northbound)				SR 57 NB Ramps (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:45 AM	17	0	47	0	0	0	0	0	8	57	0	0	0	65	25	0	219	
6:50 AM	22	0	81	0	0	0	0	0	10	42	0	0	0	38	14	0	207	
6:55 AM	21	0	60	0	0	0	0	0	10	71	0	0	0	59	15	0	236	2029
7:00 AM	14	0	55	0	0	0	0	0	4	39	0	1	0	66	22	0	201	2088
7:05 AM	15	0	37	0	0	0	0	0	14	59	0	1	0	69	18	0	213	2179
7:10 AM	10	0	42	0	0	0	0	0	20	46	0	1	0	57	19	0	195	2221
7:15 AM	17	0	40	0	0	0	0	0	10	52	0	0	0	91	24	0	234	2310
7:20 AM	13	0	31	0	0	0	0	0	17	72	0	0	0	89	21	0	243	2414
7:25 AM	20	0	53	0	0	0	0	0	14	67	0	0	0	50	15	0	219	2487
7:30 AM	18	0	43	0	0	0	0	0	13	58	0	0	0	71	15	0	218	2534
7:35 AM	24	0	46	0	0	0	0	0	9	91	0	0	0	82	13	0	265	2636
7:40 AM	16	0	40	0	0	0	0	0	16	68	0	1	0	80	18	0	239	2689
7:45 AM	22	0	48	0	0	0	0	0	16	74	0	1	0	67	14	0	242	2712
7:50 AM	19	1	62	0	0	0	0	0	4	85	0	0	0	106	22	0	299	2804
7:55 AM	24	0	47	0	0	0	0	0	8	78	0	0	0	91	17	0	265	2833
8:00 AM	23	0	36	0	0	0	0	0	16	85	0	0	0	85	18	0	263	2895
8:05 AM	28	0	48	0	0	0	0	0	12	76	0	0	0	70	11	0	245	2927
8:10 AM	30	0	45	0	0	0	0	0	5	58	0	0	0	111	17	0	266	2998
8:15 AM	16	0	43	0	0	0	0	0	8	82	0	0	0	63	19	0	231	2995
8:20 AM	25	0	33	0	0	0	0	0	12	67	0	0	0	81	21	0	239	2991
8:25 AM	18	0	38	0	0	0	0	0	12	53	0	1	0	66	16	0	204	2976
8:30 AM	21	0	32	0	0	0	0	0	6	56	0	0	0	78	23	0	216	2974
8:35 AM	17	0	42	0	0	0	0	0	11	67	0	0	0	65	18	0	220	2929
8:40 AM	16	0	29	0	0	0	0	0	14	52	0	0	0	67	22	0	200	2890
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	264	4	580	0	0	0	0	0	112	992	0	0	0	1128	228	0	3308	
Heavy Trucks	4	0	28	0	0	0	0	0	20	80	0	0	0	76	72	0	280	
Pedestrians		8				8				0				0			16	
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1	
Railroad																		
Stopped Buses																		

Comments:

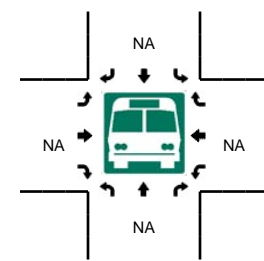
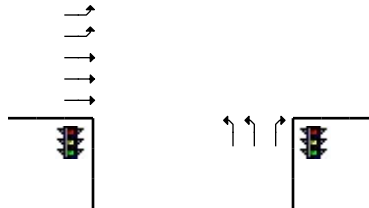
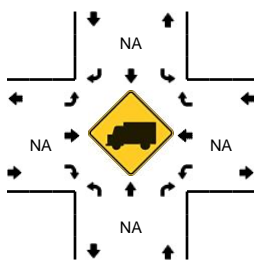
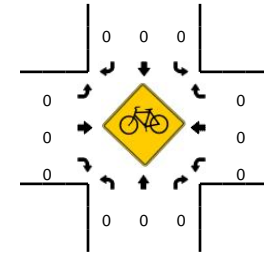
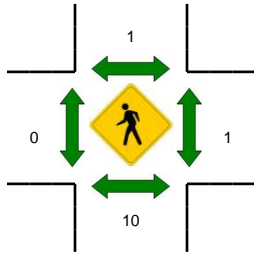
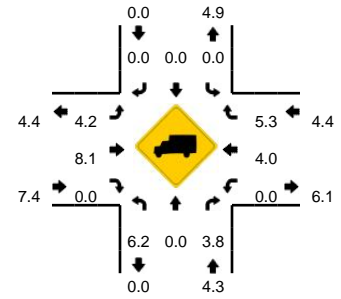
**LOCATION:** SR 57 NB Ramps -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 179

**QC JOB #:** 141063154  
**DATE:** Wed, Feb 08 2017



**Peak-Hour: 4:50 PM -- 5:50 PM**  
**Peak 15-Min: 5:00 PM -- 5:15 PM**



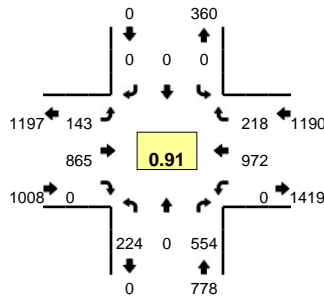
5-Min Count Period Beginning At	SR 57 NB Ramps (Northbound)				SR 57 NB Ramps (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:20 PM	16	1	38	0	0	0	0	0	22	65	0	0	0	64	20	0	226	3002
4:25 PM	9	0	50	0	0	0	0	0	13	58	0	0	0	59	30	0	219	3025
4:30 PM	9	0	36	0	0	0	0	0	12	47	0	1	0	80	32	0	217	2985
4:35 PM	15	0	41	0	0	0	0	0	30	86	0	1	0	90	37	0	300	3019
4:40 PM	10	0	45	0	0	0	0	0	17	75	0	0	0	89	34	0	270	3019
4:45 PM	11	0	44	0	0	0	0	0	6	51	0	0	0	106	40	0	258	3011
4:50 PM	20	0	51	0	0	0	0	0	29	87	0	1	0	78	42	0	308	3063
4:55 PM	15	0	62	0	0	0	0	0	10	58	0	0	0	75	25	0	245	3067
5:00 PM	16	1	60	0	0	0	0	0	17	65	0	0	0	87	39	0	285	3107
5:05 PM	10	0	54	0	0	0	0	0	22	65	0	0	0	118	46	0	315	3179
5:10 PM	8	0	48	0	0	0	0	0	28	79	0	1	0	112	40	0	316	3218
5:15 PM	17	1	61	0	0	0	0	0	12	63	0	0	0	63	36	0	253	3212
5:20 PM	15	1	72	0	0	0	0	0	10	72	0	0	0	79	32	0	281	3267
5:25 PM	20	0	66	0	0	0	0	0	15	91	0	1	0	74	37	0	304	3352
5:30 PM	12	0	65	0	0	0	0	0	11	76	0	0	0	74	20	0	258	3393
5:35 PM	18	0	69	0	0	0	0	0	14	71	0	0	0	56	27	0	255	3348
5:40 PM	28	0	71	0	0	0	0	0	11	69	0	1	0	99	34	0	313	3391
5:45 PM	16	0	57	0	0	0	0	0	8	85	0	1	0	79	19	0	265	3398
5:50 PM	19	0	55	0	0	0	0	0	9	54	0	0	0	62	26	0	225	3315
5:55 PM	21	0	65	0	0	0	0	0	16	47	0	0	0	57	13	0	219	3289
6:00 PM	19	0	56	0	0	0	0	0	14	53	0	0	0	57	28	0	227	3231
6:05 PM	10	0	35	0	0	0	0	0	15	49	0	0	0	89	24	0	222	3138
6:10 PM	11	0	55	0	0	0	0	0	11	60	0	0	0	49	18	0	204	3026
6:15 PM	17	0	54	0	0	0	0	0	14	58	0	0	0	62	32	0	237	3010
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	136	4	648	0	0	0	0	0	268	836	0	4	0	1268	500	0	3664	
Heavy Trucks	0	0	40	0	0	0	0	0	16	56	0	0	0	52	28	0	192	
Pedestrians		24				4				0				0			28	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

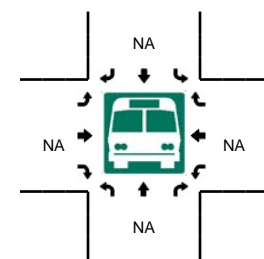
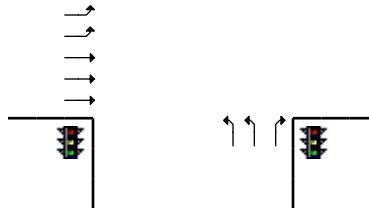
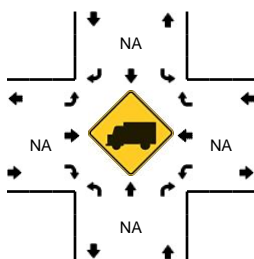
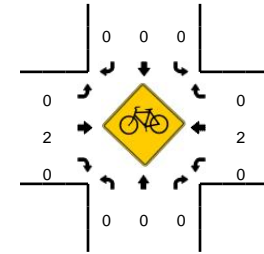
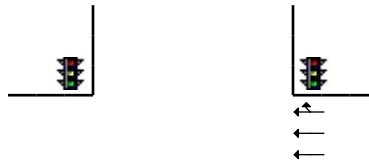
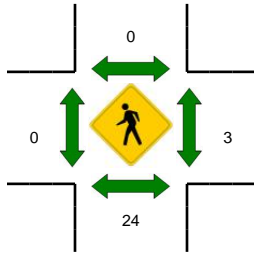
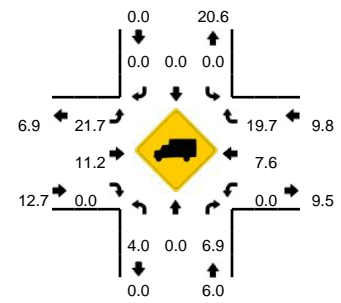
**LOCATION:** SR 57 NB Ramps -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 179

**QC JOB #:** 141063155  
**DATE:** Thu, Feb 09 2017



**Peak-Hour: 7:25 AM -- 8:25 AM**  
**Peak 15-Min: 7:50 AM -- 8:05 AM**



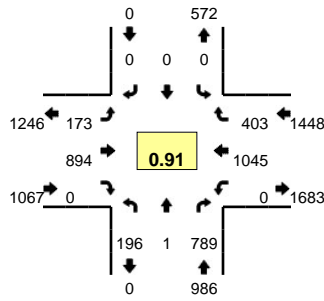
5-Min Count Period Beginning At	SR 57 NB Ramps (Northbound)				SR 57 NB Ramps (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:55 AM	22	0	61	0	0	0	0	0	8	55	0	0	0	50	14	0	210	1989
7:00 AM	11	0	59	0	0	0	0	0	12	50	0	0	0	75	17	0	224	2065
7:05 AM	13	0	44	0	0	0	0	0	12	42	0	0	0	78	17	0	206	2151
7:10 AM	15	0	40	0	0	0	0	0	18	46	0	1	0	54	28	0	202	2195
7:15 AM	17	0	51	0	0	0	0	0	6	44	0	0	0	64	18	0	200	2258
7:20 AM	11	0	39	0	0	0	0	0	14	62	0	0	0	65	29	0	220	2330
7:25 AM	17	0	40	0	0	0	0	0	12	66	0	0	0	79	28	0	242	2412
7:30 AM	18	0	52	0	0	0	0	0	15	58	0	0	0	57	20	0	220	2482
7:35 AM	22	0	40	0	0	0	0	0	9	70	0	0	0	85	21	0	247	2584
7:40 AM	8	0	38	0	0	0	0	0	15	88	0	0	0	91	16	0	256	2665
7:45 AM	16	0	41	0	0	0	0	0	18	61	0	0	0	61	20	0	217	2649
7:50 AM	16	0	53	0	0	0	0	0	8	79	0	0	0	107	8	0	271	2715
7:55 AM	22	0	51	0	0	0	0	0	14	85	0	0	0	90	16	0	278	2783
8:00 AM	20	0	58	0	0	0	0	0	5	79	0	0	0	92	14	0	268	2827
8:05 AM	28	0	45	0	0	0	0	0	13	67	0	0	0	55	22	0	230	2851
8:10 AM	18	0	56	0	0	0	0	0	9	78	0	0	0	96	18	0	275	2924
8:15 AM	19	0	42	0	0	0	0	0	15	73	0	0	0	79	17	0	245	2969
8:20 AM	20	0	38	0	0	0	0	0	9	61	0	1	0	80	18	0	227	2976
8:25 AM	31	0	44	0	0	0	0	0	11	58	0	0	0	69	16	0	229	2963
8:30 AM	15	0	32	0	0	0	0	0	9	77	0	0	0	85	13	0	231	2974
8:35 AM	24	0	43	0	0	0	0	0	8	61	0	0	0	68	14	0	218	2945
8:40 AM	19	0	41	0	0	0	0	0	10	56	0	1	0	79	25	0	231	2920
8:45 AM	24	1	34	0	0	0	0	0	10	71	0	0	0	64	27	0	231	2934
8:50 AM	24	0	41	0	0	0	0	0	3	53	0	0	0	48	21	0	190	2853
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	232	0	648	0	0	0	0	0	108	972	0	0	0	1156	152	0	3268	
Heavy Trucks	12	0	52	0	0	0	0	0	32	100	0	0	0	84	16	0	296	
Pedestrians		40			0					0				4			44	
Bicycles	0	0	0		0	0	0		0	2	0		0	1	0		3	
Railroad																		
Stopped Buses																		

Comments:

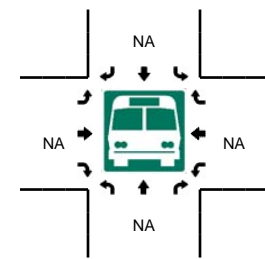
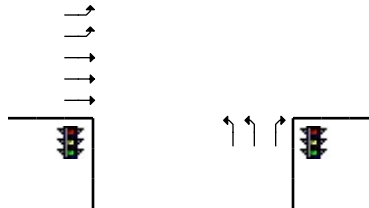
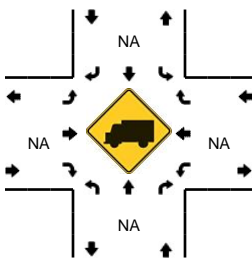
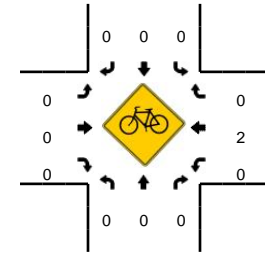
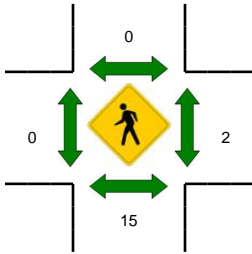
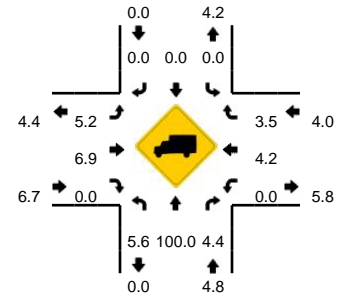
**LOCATION:** SR 57 NB Ramps -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 179

**QC JOB #:** 141063156  
**DATE:** Thu, Feb 09 2017



**Peak-Hour: 4:45 PM -- 5:45 PM**  
**Peak 15-Min: 5:00 PM -- 5:15 PM**



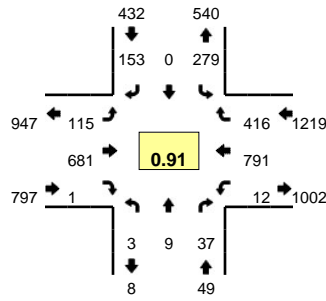
5-Min Count Period Beginning At	SR 57 NB Ramps (Northbound)				SR 57 NB Ramps (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:15 PM	13	0	64	0	0	0	0	0	27	72	0	1	0	83	28	0	288	3086
4:20 PM	19	0	67	0	0	0	0	0	18	51	0	0	0	57	30	0	242	3058
4:25 PM	15	0	56	0	0	0	0	0	8	69	0	0	0	63	34	0	245	3070
4:30 PM	15	0	58	0	0	0	0	0	15	65	0	0	0	90	31	0	274	3133
4:35 PM	9	1	58	0	0	0	0	0	15	76	0	0	0	89	33	0	281	3132
4:40 PM	14	0	72	0	0	0	0	0	22	58	0	0	0	58	47	0	271	3128
4:45 PM	4	0	59	0	0	0	0	0	9	70	0	2	0	98	37	0	279	3126
4:50 PM	17	0	69	0	0	0	0	0	17	66	0	0	0	75	33	0	277	3181
4:55 PM	13	1	55	0	0	0	0	0	13	85	0	0	0	81	29	0	277	3222
5:00 PM	19	0	60	0	0	0	0	0	12	75	0	0	0	72	34	0	272	3247
5:05 PM	16	0	65	0	0	0	0	0	23	78	0	0	0	109	43	0	334	3322
5:10 PM	19	0	68	0	0	0	0	0	28	83	0	0	0	107	47	0	352	3392
5:15 PM	19	0	73	0	0	0	0	0	15	70	0	0	0	70	18	0	265	3369
5:20 PM	20	0	69	0	0	0	0	0	6	56	0	0	0	101	36	0	288	3415
5:25 PM	10	0	62	0	0	0	0	0	12	79	0	1	0	84	34	0	282	3452
5:30 PM	19	0	67	0	0	0	0	0	12	95	0	0	0	89	32	0	314	3492
5:35 PM	14	0	64	0	0	0	0	0	12	67	0	2	0	61	26	0	246	3457
5:40 PM	26	0	78	0	0	0	0	0	9	70	0	0	0	98	34	0	315	3501
5:45 PM	9	0	69	0	0	0	0	0	12	68	0	0	0	63	22	0	243	3465
5:50 PM	17	0	73	0	0	0	0	0	13	61	0	0	0	75	10	0	249	3437
5:55 PM	19	0	63	0	0	0	0	0	14	60	0	1	0	69	25	0	251	3411
6:00 PM	11	0	55	0	0	0	0	0	9	72	0	0	0	51	19	0	217	3356
6:05 PM	16	1	59	0	0	0	0	0	10	61	0	0	0	65	20	0	232	3254
6:10 PM	11	1	48	0	0	0	0	0	17	57	0	0	0	58	24	0	216	3118
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	216	0	772	0	0	0	0	0	252	944	0	0	0	1152	496	0	3832	
Heavy Trucks	8	0	20	0	0	0	0	0	8	80	0	0	0	76	8	0	200	
Pedestrians		4				0				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1	
Railroad																		
Stopped Buses																		

Comments:

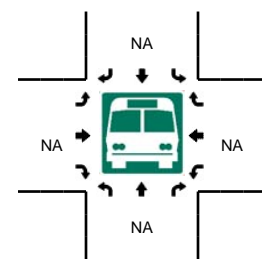
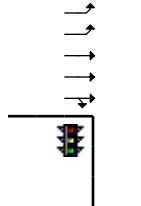
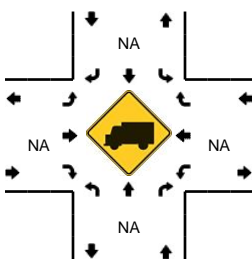
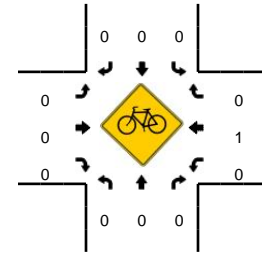
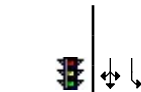
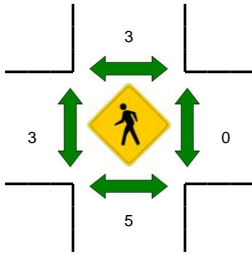
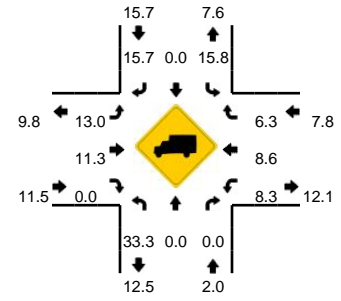
**LOCATION:** SR 57 SB Ramps/Iowa PI -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 180

**QC JOB #:** 141063157  
**DATE:** Tue, Mar 07 2017



**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:55 AM -- 8:10 AM**



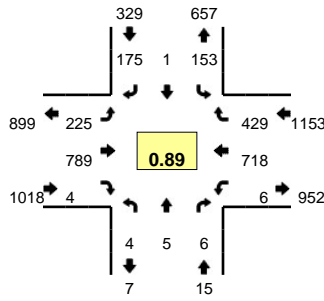
5-Min Count Period Beginning At	SR 57 SB Ramps/Iowa PI (Northbound)				SR 57 SB Ramps/Iowa PI (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	2	0	12	0	11	0	7	36	0	0	0	41	26	0	135	1613
7:05 AM	0	0	2	0	17	0	4	0	7	55	0	0	1	48	34	1	169	1678
7:10 AM	0	3	0	0	13	0	13	0	15	41	0	0	0	47	28	0	160	1715
7:15 AM	1	1	3	0	20	0	6	0	7	48	2	0	0	35	44	0	167	1773
7:20 AM	0	0	1	0	17	0	9	0	6	50	0	0	0	61	40	0	184	1842
7:25 AM	0	0	2	0	15	0	7	0	12	50	0	0	0	53	20	1	160	1896
7:30 AM	0	0	9	0	28	0	8	0	11	63	0	0	0	62	29	0	210	1977
7:35 AM	0	1	0	0	17	0	17	0	9	50	1	0	1	58	36	0	190	2044
7:40 AM	0	1	3	0	19	0	13	0	12	65	0	0	0	76	38	0	227	2096
7:45 AM	0	2	4	0	24	0	13	0	12	41	0	0	2	67	35	0	200	2104
7:50 AM	0	1	2	0	29	0	22	0	6	51	0	0	0	62	36	1	210	2166
7:55 AM	1	2	5	0	26	0	13	0	9	81	0	0	1	84	33	0	255	2267
8:00 AM	0	0	2	0	19	0	14	0	7	57	0	0	0	82	31	0	212	2344
8:05 AM	1	0	3	0	23	0	17	0	10	63	0	0	1	62	38	2	220	2395
8:10 AM	0	1	4	0	14	0	8	0	7	40	0	0	0	59	29	0	162	2397
8:15 AM	1	1	2	0	17	0	17	0	9	53	0	0	2	66	48	1	217	2447
8:20 AM	0	0	3	0	29	0	4	0	16	64	0	0	0	56	29	0	201	2464
8:25 AM	0	0	0	0	34	0	7	0	7	53	0	0	0	57	34	1	193	2497
8:30 AM	0	0	2	0	19	0	7	0	12	48	0	0	1	54	45	1	189	2476
8:35 AM	0	1	1	0	18	0	13	0	12	43	1	0	0	49	39	1	178	2464
8:40 AM	0	0	0	0	21	0	11	0	9	59	0	0	0	50	34	0	184	2421
8:45 AM	0	1	0	0	8	0	12	0	15	46	0	0	1	46	31	1	161	2382
8:50 AM	0	0	1	0	19	0	15	0	16	43	0	0	1	48	36	0	179	2351
8:55 AM	0	3	0	0	16	0	11	0	8	42	2	0	0	63	38	0	183	2279
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	8	40	0	272	0	176	0	104	804	0	0	8	912	408	8	2748	
Heavy Trucks	4	0	0	0	44	0	16	0	12	80	0	0	0	100	28	0	284	
Pedestrians		8				0				0				0			8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

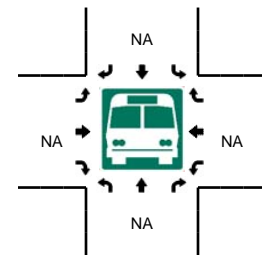
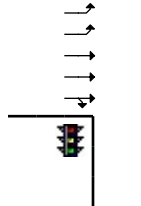
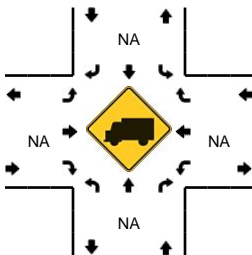
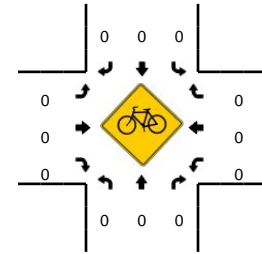
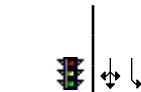
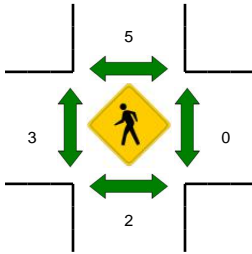
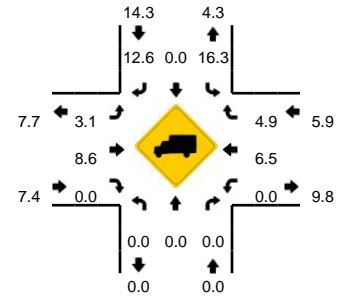
**LOCATION:** SR 57 SB Ramps/Iowa PI -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 180

**QC JOB #:** 141063158  
**DATE:** Tue, Feb 07 2017



**Peak-Hour: 3:35 PM -- 4:35 PM**  
**Peak 15-Min: 3:35 PM -- 3:50 PM**



5-Min Count Period Beginning At	SR 57 SB Ramps/Iowa PI (Northbound)				SR 57 SB Ramps/Iowa PI (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:05 PM	0	1	1	0	10	0	13	0	31	62	0	0	1	61	34	0	214	
3:10 PM	0	0	1	0	15	0	12	0	23	79	0	0	1	52	33	2	218	
3:15 PM	0	0	1	0	19	0	16	0	16	72	0	0	0	44	33	0	201	
3:20 PM	1	1	1	0	14	0	24	0	12	38	0	0	2	54	36	1	184	
3:25 PM	0	0	1	0	17	0	6	0	18	60	0	0	0	33	31	2	168	
3:30 PM	0	0	1	0	13	0	22	0	14	45	0	0	0	58	32	0	185	
3:35 PM	0	1	1	0	17	0	15	0	25	75	0	0	0	58	46	0	238	
3:40 PM	0	0	0	0	9	0	13	0	29	70	0	0	0	84	34	0	239	
3:45 PM	0	1	1	0	18	0	18	0	18	67	0	0	1	71	33	1	229	
3:50 PM	1	0	3	0	23	0	18	0	17	48	0	0	0	66	36	0	212	
3:55 PM	0	1	0	0	11	0	12	0	16	57	0	2	0	63	32	0	194	2452
4:00 PM	0	1	1	0	10	0	14	0	23	65	1	0	0	65	38	0	218	2500
4:05 PM	0	0	0	0	7	0	11	0	22	60	0	0	0	59	42	0	201	2487
4:10 PM	0	0	0	0	12	1	14	0	13	87	1	0	0	55	39	1	223	2492
4:15 PM	0	1	0	0	8	0	11	0	18	77	0	0	1	58	38	0	212	2503
4:20 PM	1	0	0	0	15	0	16	0	13	62	0	0	0	48	29	1	185	2504
4:25 PM	0	0	0	0	8	0	16	0	21	45	2	0	0	37	38	1	168	2504
4:30 PM	2	0	0	0	15	0	17	0	8	76	0	0	0	54	24	0	196	2515
4:35 PM	0	1	1	0	9	0	18	0	26	69	1	0	1	58	39	0	223	2500
4:40 PM	0	0	2	0	5	1	14	0	20	53	0	0	0	52	30	1	178	2439
4:45 PM	0	0	0	0	14	1	17	0	13	51	0	0	1	66	34	1	198	2408
4:50 PM	0	0	0	0	6	0	17	0	18	69	1	0	1	64	33	0	209	2405
4:55 PM	1	0	0	0	18	0	19	0	16	56	0	0	1	59	29	0	199	2410
5:00 PM	0	0	0	0	11	0	15	0	16	53	0	0	0	47	31	0	173	2365
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	8	8	0	176	0	184	0	288	848	0	0	4	852	452	4	2824	
Heavy Trucks	0	0	0		28	0	20		8	100	0		0	60	20		236	
Pedestrians		4				0				4				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

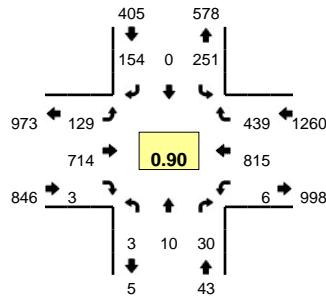
Comments:



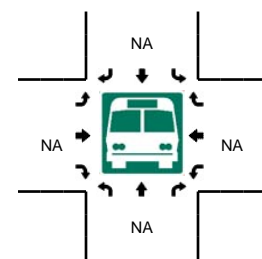
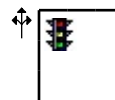
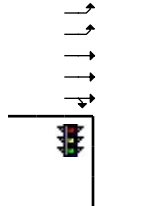
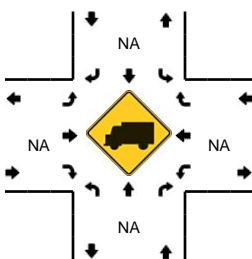
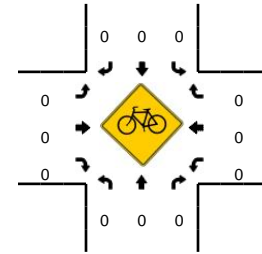
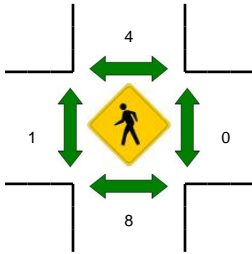
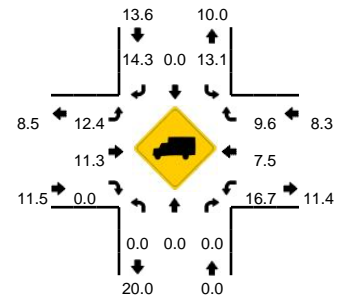
**LOCATION:** SR 57 SB Ramps/Iowa PI -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 180

**QC JOB #:** 141063159  
**DATE:** Wed, Mar 08 2017



**Peak-Hour: 7:35 AM -- 8:35 AM**  
**Peak 15-Min: 7:50 AM -- 8:05 AM**



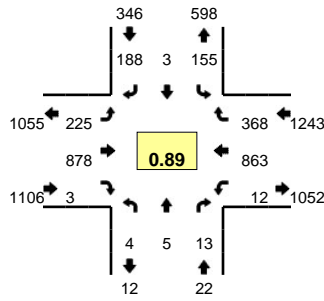
5-Min Count Period Beginning At	SR 57 SB Ramps/Iowa PI (Northbound)				SR 57 SB Ramps/Iowa PI (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	12	0	12	0	9	24	0	0	0	37	30	0	125	1621
7:05 AM	0	1	0	0	9	0	5	0	8	52	0	0	1	47	45	0	168	1684
7:10 AM	0	1	1	0	22	0	13	0	12	35	1	0	0	42	21	1	149	1710
7:15 AM	0	1	2	0	16	0	9	0	6	36	0	0	0	40	41	0	151	1749
7:20 AM	0	1	5	0	14	0	4	0	14	57	0	0	0	62	47	0	204	1833
7:25 AM	0	1	2	0	19	0	6	0	9	56	0	0	0	49	25	0	167	1880
7:30 AM	0	1	6	0	25	0	12	0	11	51	0	0	0	53	32	0	191	1931
7:35 AM	0	0	2	0	14	0	9	0	7	58	0	0	1	66	42	0	199	1995
7:40 AM	0	1	2	0	15	0	16	1	8	56	1	0	0	82	38	0	220	2050
7:45 AM	0	0	1	0	22	0	16	0	8	51	0	0	0	55	24	0	177	2058
7:50 AM	0	0	2	0	26	0	18	0	11	62	0	0	0	88	38	0	245	2151
7:55 AM	1	3	5	0	29	0	19	0	5	70	0	1	0	71	36	0	240	2236
8:00 AM	0	0	6	0	24	0	7	0	5	72	2	0	0	78	30	0	224	2335
8:05 AM	0	2	4	0	21	0	16	0	19	57	0	0	1	63	33	0	216	2383
8:10 AM	0	2	2	0	16	0	9	0	18	49	0	0	0	60	45	0	201	2435
8:15 AM	1	0	4	0	20	0	13	0	13	49	0	0	0	71	43	1	215	2499
8:20 AM	0	1	1	0	24	0	9	0	13	69	0	0	0	66	31	1	215	2510
8:25 AM	1	0	0	0	18	0	10	0	6	61	0	0	0	48	42	1	187	2530
8:30 AM	0	1	1	0	21	0	12	0	15	60	0	0	0	67	37	1	215	2554
8:35 AM	0	0	0	0	29	0	18	0	16	55	0	0	0	47	26	0	191	2546
8:40 AM	0	0	2	0	24	0	15	0	4	55	0	0	0	68	27	0	195	2521
8:45 AM	0	1	1	0	22	0	17	0	11	47	0	0	0	51	32	1	183	2527
8:50 AM	1	1	0	0	29	0	12	0	10	29	0	0	1	40	37	1	161	2443
8:55 AM	0	1	1	0	22	0	17	0	13	45	0	0	0	65	41	2	207	2410
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	12	52	0	316	0	176	0	84	816	8	4	0	948	416	0	2836	
Heavy Trucks	0	0	0	0	28	0	24	0	8	100	0	0	0	76	36	0	272	
Pedestrians		12				0				0				0			12	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

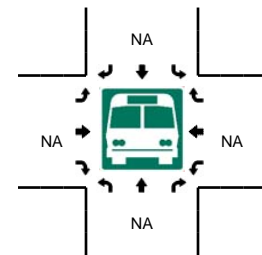
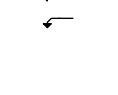
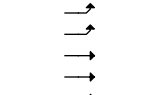
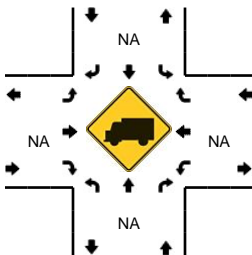
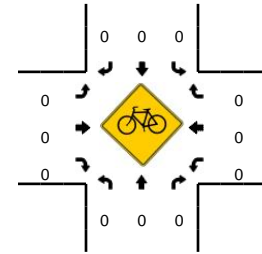
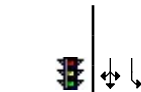
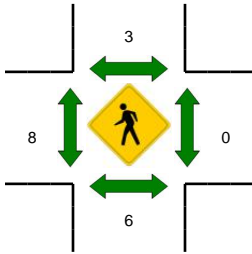
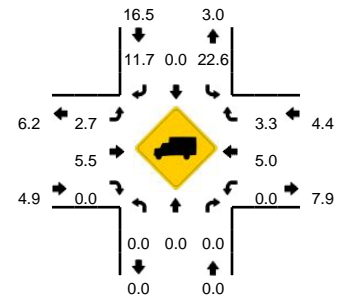
**LOCATION:** SR 57 SB Ramps/Iowa PI -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 180

**QC JOB #:** 141063160  
**DATE:** Wed, Feb 08 2017



**Peak-Hour: 4:30 PM -- 5:30 PM**  
**Peak 15-Min: 5:00 PM -- 5:15 PM**



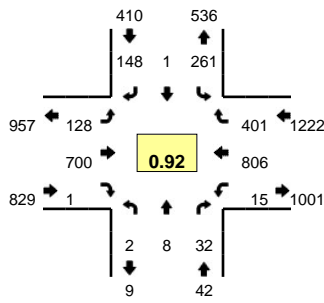
5-Min Count Period Beginning At	SR 57 SB Ramps/Iowa PI (Northbound)				SR 57 SB Ramps/Iowa PI (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	11	0	9	0	15	60	0	0	0	45	23	0	164	2518
4:05 PM	1	0	1	0	13	0	18	0	20	54	0	0	1	51	47	0	206	2464
4:10 PM	0	0	1	0	10	0	11	0	11	78	0	0	1	74	47	0	233	2494
4:15 PM	1	0	3	0	11	0	14	0	17	67	0	0	0	77	27	0	217	2515
4:20 PM	0	0	0	0	8	0	10	0	18	79	0	0	0	55	21	0	191	2511
4:25 PM	2	0	1	0	14	0	14	0	12	53	2	0	0	35	36	0	169	2498
4:30 PM	0	0	1	0	9	0	9	0	10	69	0	0	0	65	31	0	194	2464
4:35 PM	3	2	1	0	16	0	8	0	23	82	1	0	1	69	39	1	246	2490
4:40 PM	0	0	3	0	13	1	11	0	14	79	1	0	0	62	26	0	210	2436
4:45 PM	0	0	1	0	15	0	18	0	20	57	0	0	0	78	49	0	238	2468
4:50 PM	0	1	1	0	18	0	24	0	16	77	0	0	1	74	25	1	238	2498
4:55 PM	0	1	2	0	16	0	21	0	8	51	0	0	1	56	18	1	175	2481
5:00 PM	0	0	0	0	11	0	14	0	20	73	0	0	0	78	35	2	233	2550
5:05 PM	0	1	2	0	10	1	18	0	22	76	1	0	2	92	35	0	260	2604
5:10 PM	1	0	0	0	10	1	17	0	33	91	0	0	0	85	28	0	266	2637
5:15 PM	0	0	0	0	11	0	16	0	26	67	0	0	1	59	32	0	212	2632
5:20 PM	0	0	0	0	14	0	19	0	18	77	0	0	0	71	27	1	227	2668
5:25 PM	0	0	2	0	12	0	13	0	15	79	0	0	0	74	23	0	218	2717
5:30 PM	0	1	1	0	12	0	12	0	16	72	2	0	0	56	21	0	193	2716
5:35 PM	2	0	0	0	14	0	15	0	19	80	0	0	0	68	20	0	218	2688
5:40 PM	0	0	1	0	16	1	15	0	15	59	0	0	1	71	36	1	216	2694
5:45 PM	0	2	0	0	17	0	12	0	7	61	0	0	0	83	30	0	212	2668
5:50 PM	0	0	1	0	8	0	19	0	10	53	2	3	0	52	18	0	166	2596
5:55 PM	0	3	3	0	9	1	9	0	22	47	0	0	1	62	22	0	179	2600
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	4	8	0	124	8	196	0	300	960	4	0	8	1020	392	8	3036	
Heavy Trucks	0	0	0	0	24	0	8	0	16	44	0	0	0	44	16	0	152	
Pedestrians		4				8				4				0			16	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

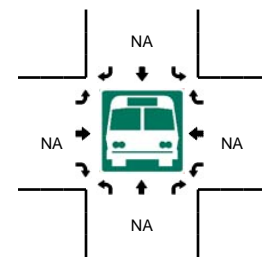
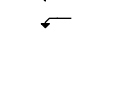
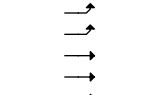
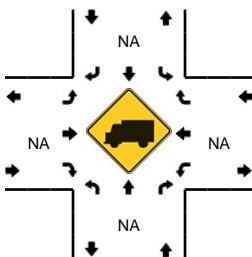
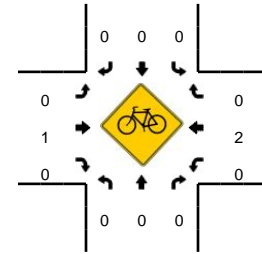
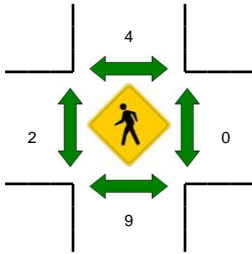
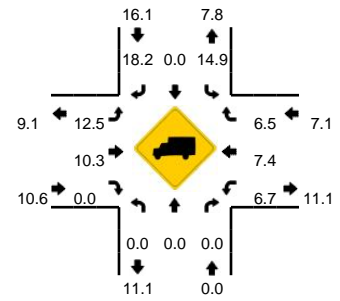
**LOCATION:** SR 57 SB Ramps/Iowa PI -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 180

**QC JOB #:** 141063161  
**DATE:** Thu, Feb 09 2017



**Peak-Hour: 7:35 AM -- 8:35 AM**  
**Peak 15-Min: 7:50 AM -- 8:05 AM**



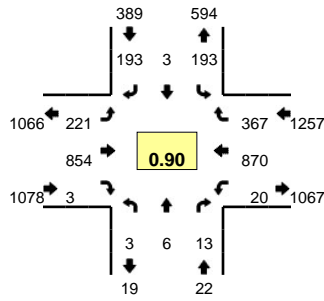
5-Min Count Period Beginning At	SR 57 SB Ramps/Iowa PI (Northbound)				SR 57 SB Ramps/Iowa PI (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	2	0	17	0	8	0	5	38	0	0	0	51	41	0	162	1572
7:05 AM	0	2	2	0	13	0	7	0	5	35	0	0	1	42	32	0	139	1615
7:10 AM	0	2	2	0	11	0	9	0	9	54	1	0	0	57	35	0	180	1692
7:15 AM	0	0	1	0	10	0	13	0	11	46	0	0	0	41	35	0	157	1737
7:20 AM	0	0	1	0	16	0	3	0	5	48	1	0	0	53	27	0	154	1772
7:25 AM	0	1	1	0	23	0	6	0	6	51	0	0	0	51	26	1	166	1815
7:30 AM	0	2	9	0	18	0	10	0	16	45	0	0	0	48	38	0	186	1879
7:35 AM	0	0	3	0	19	0	9	0	7	52	0	0	1	74	41	0	206	1961
7:40 AM	0	2	4	0	21	0	7	0	10	80	0	0	0	56	36	1	217	2040
7:45 AM	0	1	3	0	18	0	9	0	12	61	0	0	0	54	26	0	184	2065
7:50 AM	0	1	2	0	28	0	23	0	4	60	0	0	0	73	37	0	228	2138
7:55 AM	0	0	6	0	19	0	13	0	12	71	0	1	0	91	35	0	248	2227
8:00 AM	0	0	1	0	22	0	19	0	9	54	0	0	0	75	21	0	201	2266
8:05 AM	0	0	7	0	26	0	8	0	13	49	0	0	1	54	37	3	198	2325
8:10 AM	1	1	2	0	20	0	16	0	11	67	0	0	1	77	44	0	240	2385
8:15 AM	1	0	0	0	20	0	10	0	10	57	1	0	1	68	28	0	196	2424
8:20 AM	0	1	3	0	16	1	13	0	17	51	0	0	2	51	37	0	192	2462
8:25 AM	0	1	0	0	22	0	15	0	12	39	0	0	1	69	25	4	188	2484
8:30 AM	0	1	1	0	30	0	6	0	10	59	0	0	0	64	34	0	205	2503
8:35 AM	0	0	0	0	19	0	20	0	11	51	0	0	0	63	39	0	203	2500
8:40 AM	0	2	2	0	19	0	10	0	8	43	0	0	0	44	36	1	165	2448
8:45 AM	0	1	0	0	21	0	15	0	14	58	0	0	1	61	37	0	208	2472
8:50 AM	0	1	2	0	22	0	8	0	9	30	0	0	1	39	24	2	138	2382
8:55 AM	0	0	0	0	17	0	12	0	11	39	0	0	0	75	34	1	189	2323
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	4	36	0	276	0	220	0	100	740	0	4	0	956	372	0	2708	
Heavy Trucks	0	0	0	0	20	0	32	0	12	84	0	0	0	60	28	0	236	
Pedestrians		12				8				4				0			24	
Bicycles	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
Railroad																		
Stopped Buses																		

Comments:

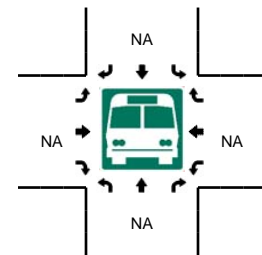
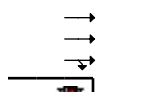
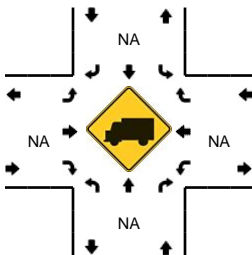
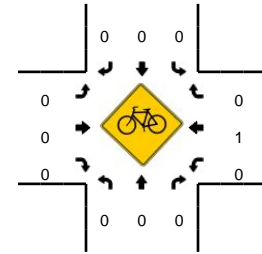
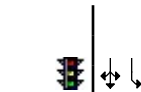
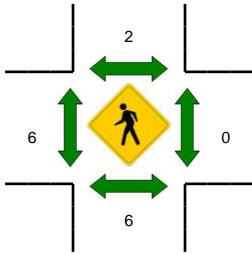
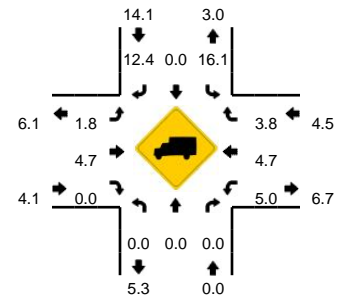
**LOCATION:** SR 57 SB Ramps/Iowa PI -- Orangethorpe Ave  
**CITY/STATE:** Orange, CA

**CLIENT ID:** 180

**QC JOB #:** 141063162  
**DATE:** Thu, Feb 09 2017



**Peak-Hour: 4:45 PM -- 5:45 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**



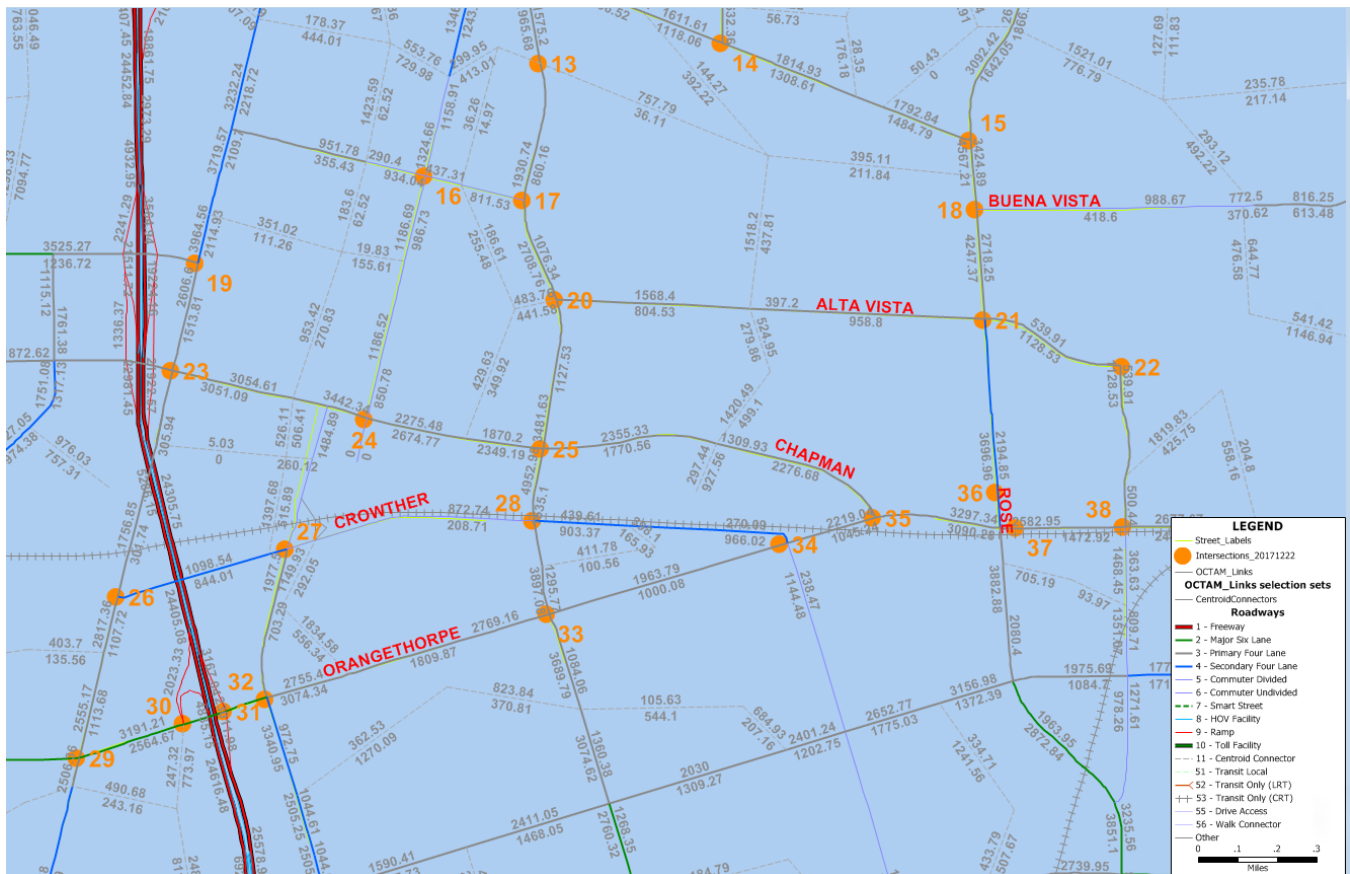
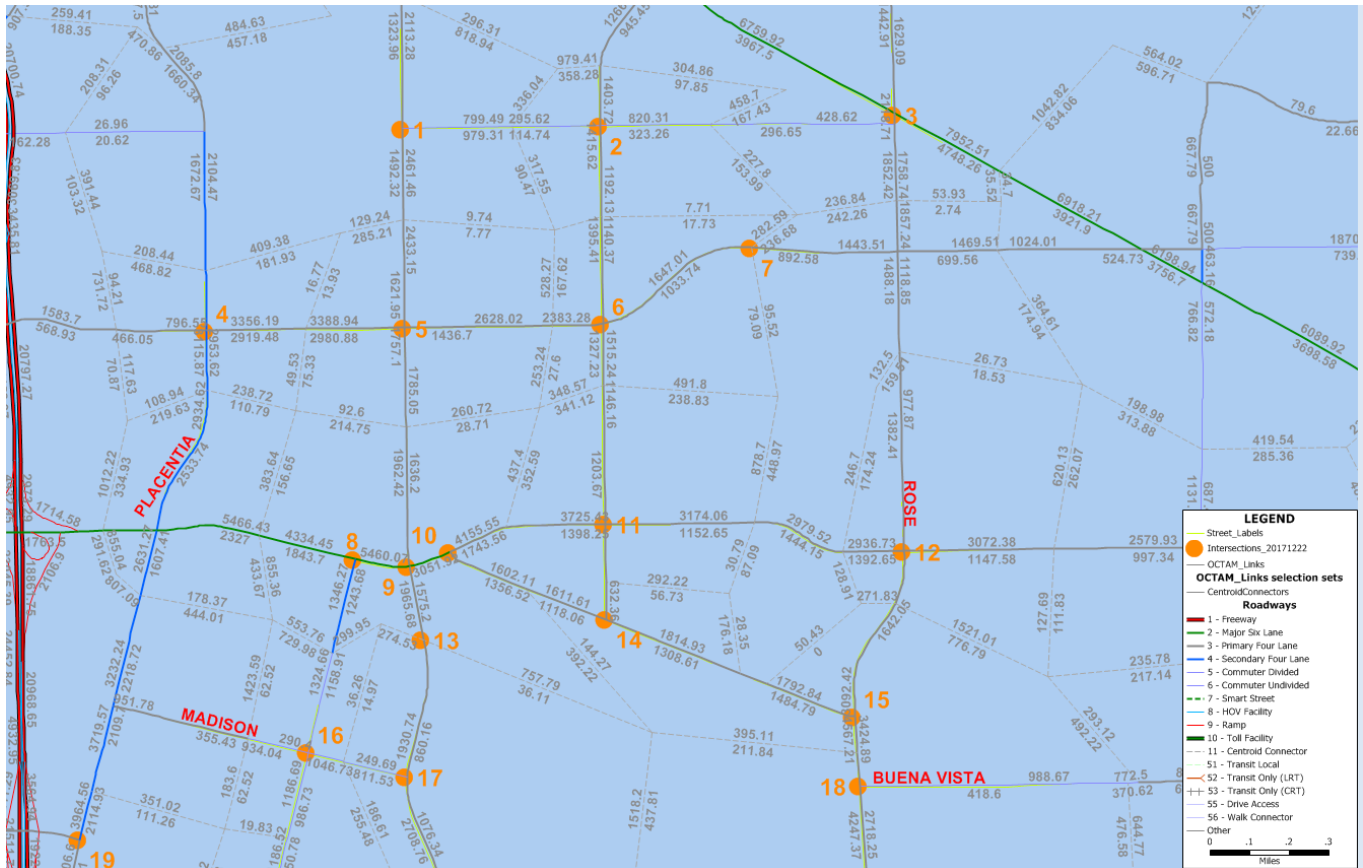
5-Min Count Period Beginning At	SR 57 SB Ramps/Iowa PI (Northbound)				SR 57 SB Ramps/Iowa PI (Southbound)				Orangethorpe Ave (Eastbound)				Orangethorpe Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:15 PM	0	0	1	0	12	0	14	0	20	76	0	0	0	58	32	0	213	2552
4:20 PM	1	0	0	0	14	0	21	0	18	55	0	0	2	58	22	1	192	2542
4:25 PM	0	1	1	0	21	0	17	0	19	53	0	0	1	48	32	0	193	2546
4:30 PM	0	2	2	0	16	0	5	0	14	62	0	0	0	65	34	0	200	2537
4:35 PM	0	0	3	0	18	0	18	0	25	72	0	0	1	59	26	2	224	2521
4:40 PM	0	0	2	0	10	1	20	0	13	68	0	0	1	59	34	0	208	2496
4:45 PM	0	0	0	0	10	1	12	0	18	73	0	0	0	64	32	3	213	2476
4:50 PM	0	0	1	0	13	0	14	0	19	60	0	0	0	73	22	0	202	2489
4:55 PM	0	0	1	0	22	0	20	0	14	75	0	0	0	60	26	0	218	2506
5:00 PM	0	0	2	0	14	1	21	0	18	72	0	0	1	61	28	1	219	2519
5:05 PM	0	0	1	0	12	0	13	0	10	91	0	0	0	92	48	1	268	2571
5:10 PM	0	0	1	0	17	0	14	0	32	84	0	0	0	87	33	0	268	2618
5:15 PM	0	0	0	0	14	0	19	0	24	74	0	0	1	72	27	0	231	2636
5:20 PM	0	0	1	0	18	0	18	0	21	48	3	0	4	76	34	0	223	2667
5:25 PM	0	1	0	0	9	0	3	0	9	75	0	0	2	77	28	1	205	2679
5:30 PM	2	2	0	0	21	1	26	0	17	86	0	0	2	64	27	1	249	2728
5:35 PM	1	2	5	0	20	0	16	0	20	60	0	0	2	62	29	0	217	2721
5:40 PM	0	1	1	0	23	0	17	0	19	56	0	0	1	82	33	0	233	2746
5:45 PM	0	1	1	0	10	0	12	0	15	64	1	0	1	57	23	0	185	2718
5:50 PM	3	0	0	0	14	1	23	0	10	54	0	0	2	51	15	1	174	2690
5:55 PM	0	0	3	0	20	0	12	0	7	50	0	0	1	68	30	0	191	2663
6:00 PM	0	2	1	0	12	0	8	0	23	68	0	0	0	52	21	0	187	2631
6:05 PM	1	1	1	0	8	1	12	0	14	59	2	0	0	46	25	0	170	2533
6:10 PM	1	2	1	0	13	0	13	0	17	56	0	0	0	42	24	0	169	2434
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	8	0	172	0	184	0	264	996	0	0	4	1004	432	4	3068	
Heavy Trucks	0	0	0		44	0	20		12	48	0		0	60	8		192	
Pedestrians		4				0				4				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1	
Railroad																		
Stopped Buses																		

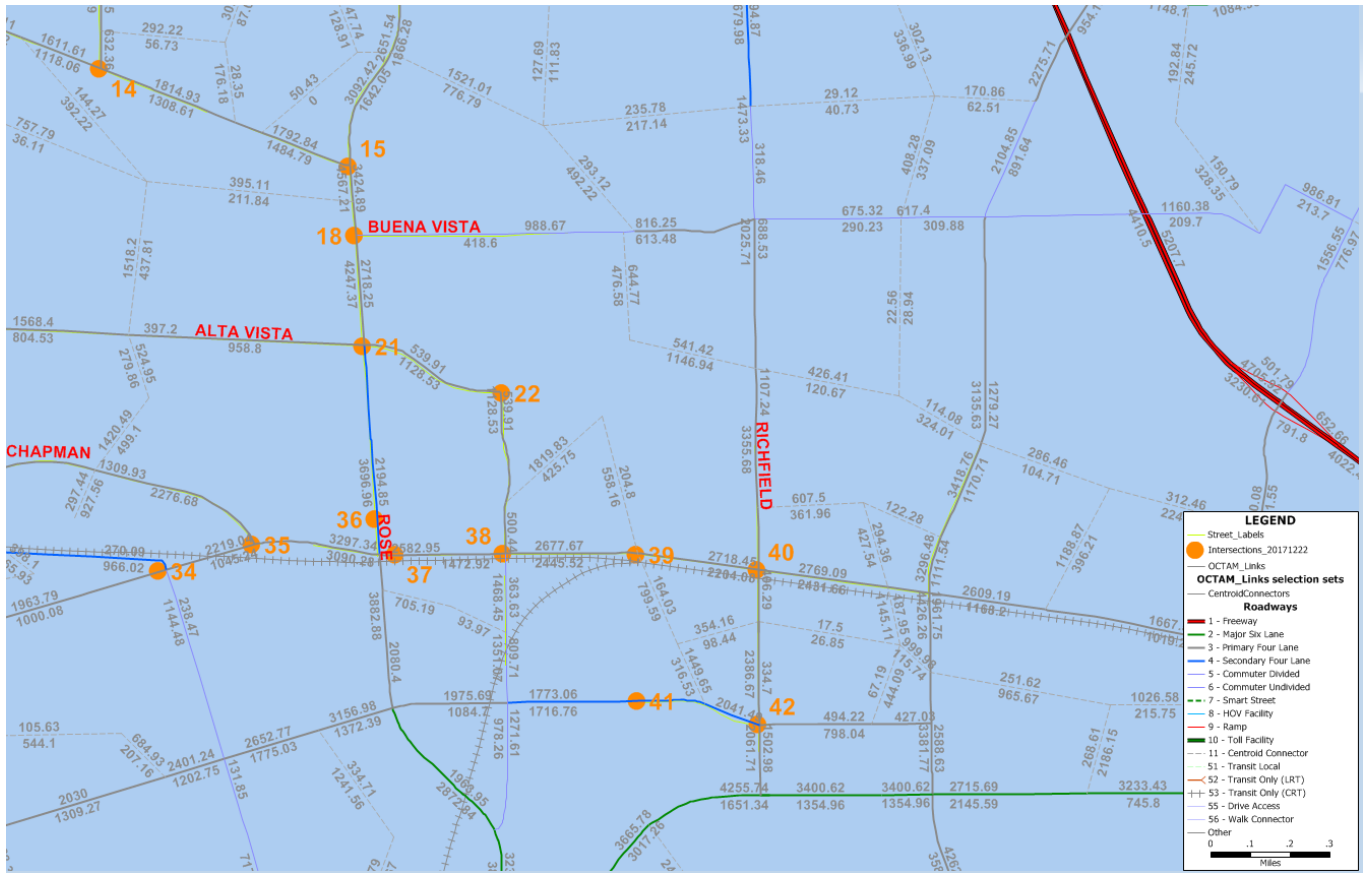
Comments:

# **APPENDIX C – OCTA MODEL (OCTAM) BASE YEAR AND FUTURE YEAR TRAFFIC VOLUMES**

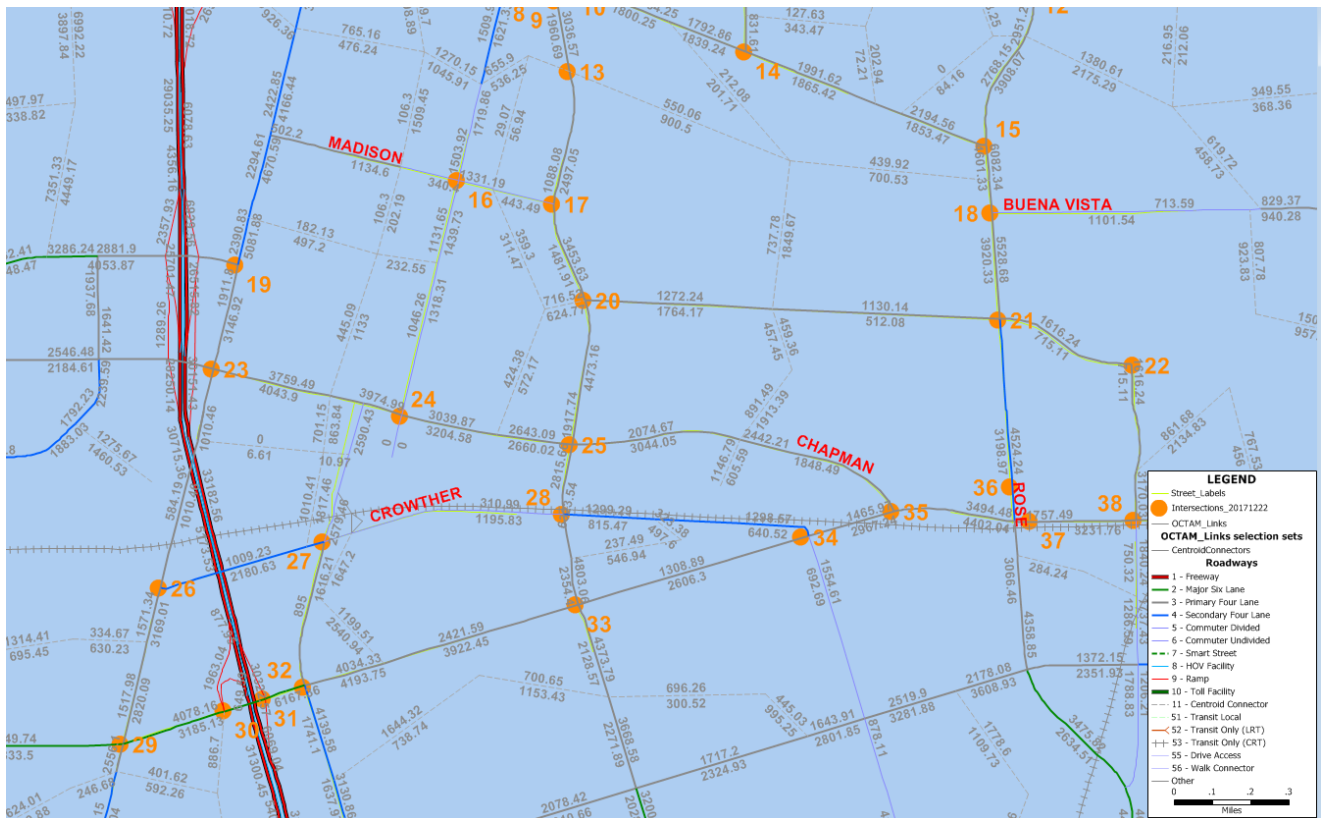
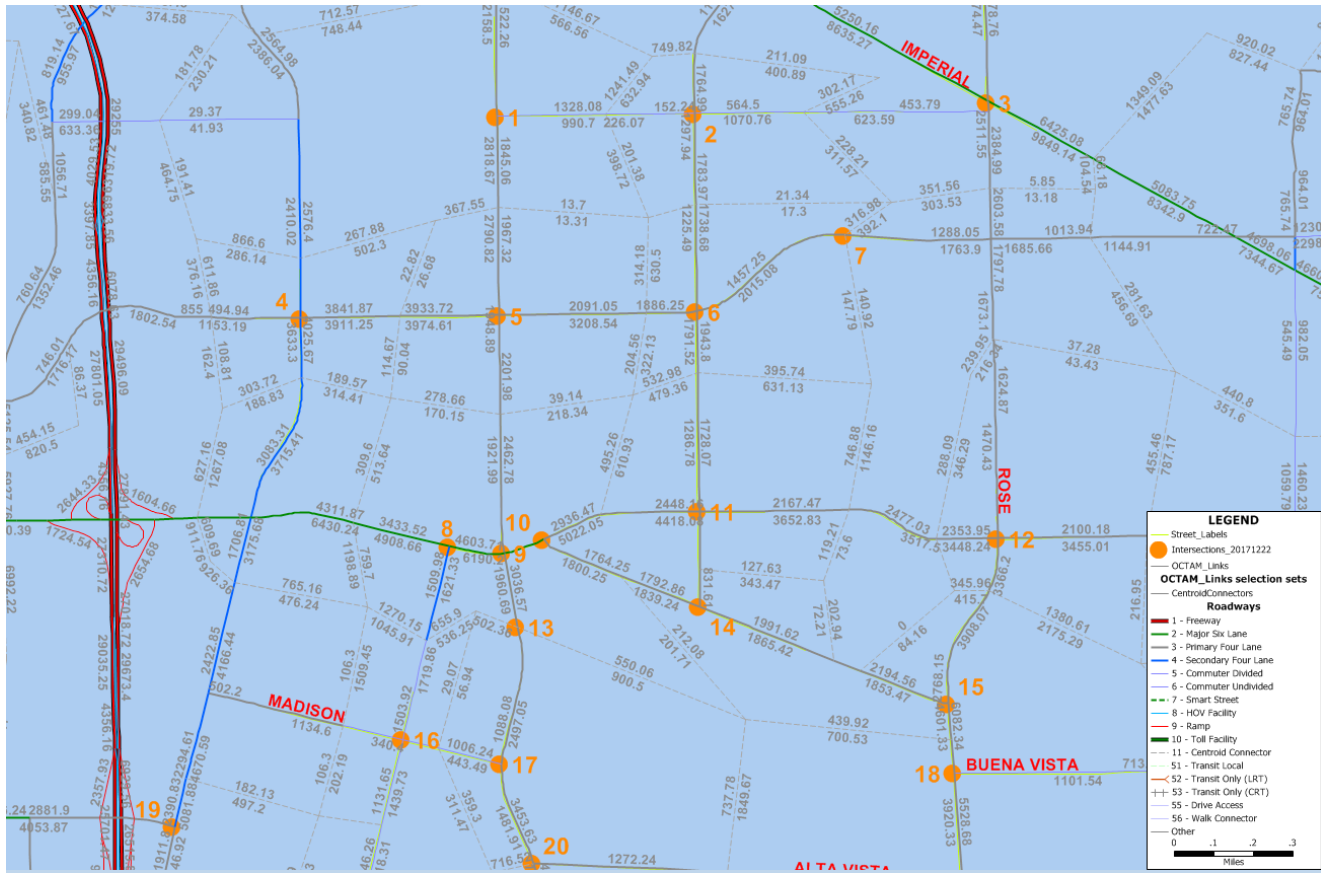
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# Base Year AM Traffic Flow





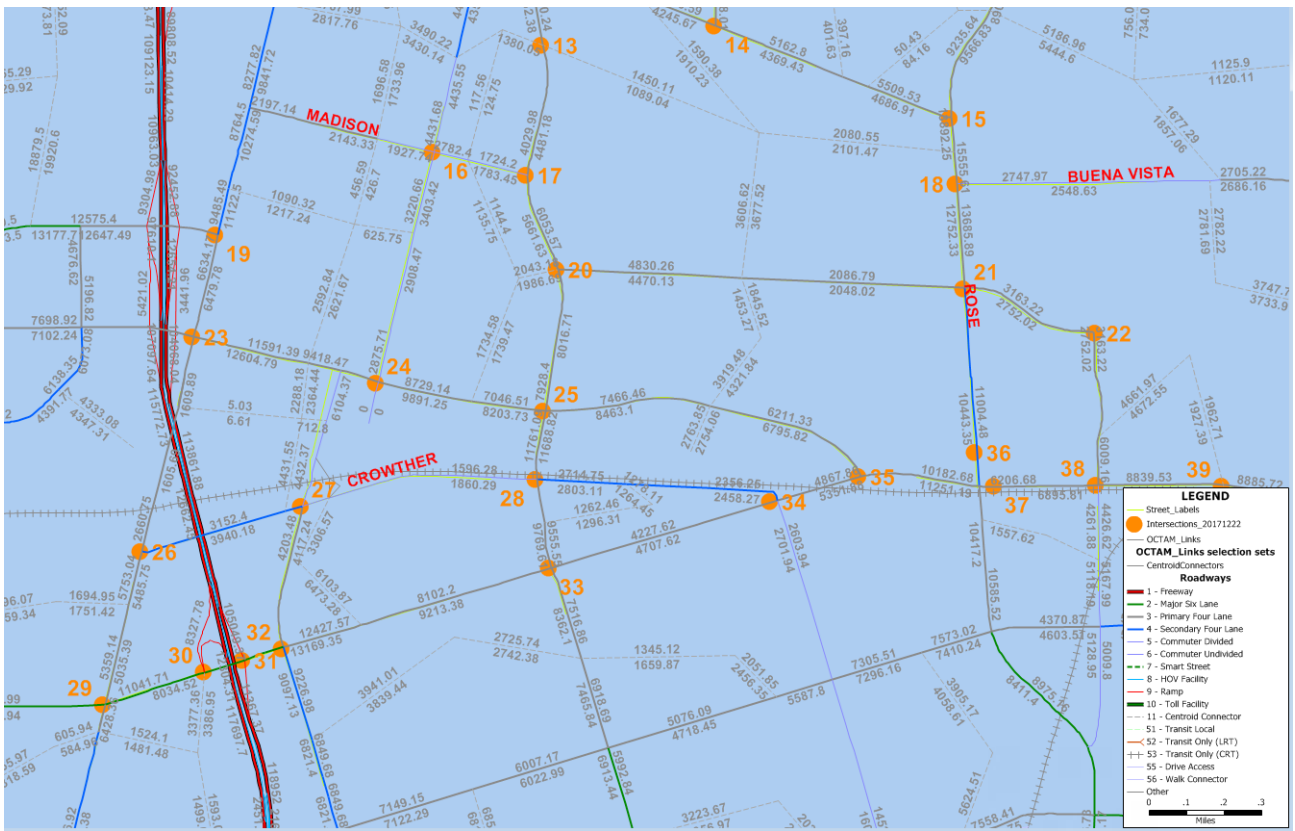
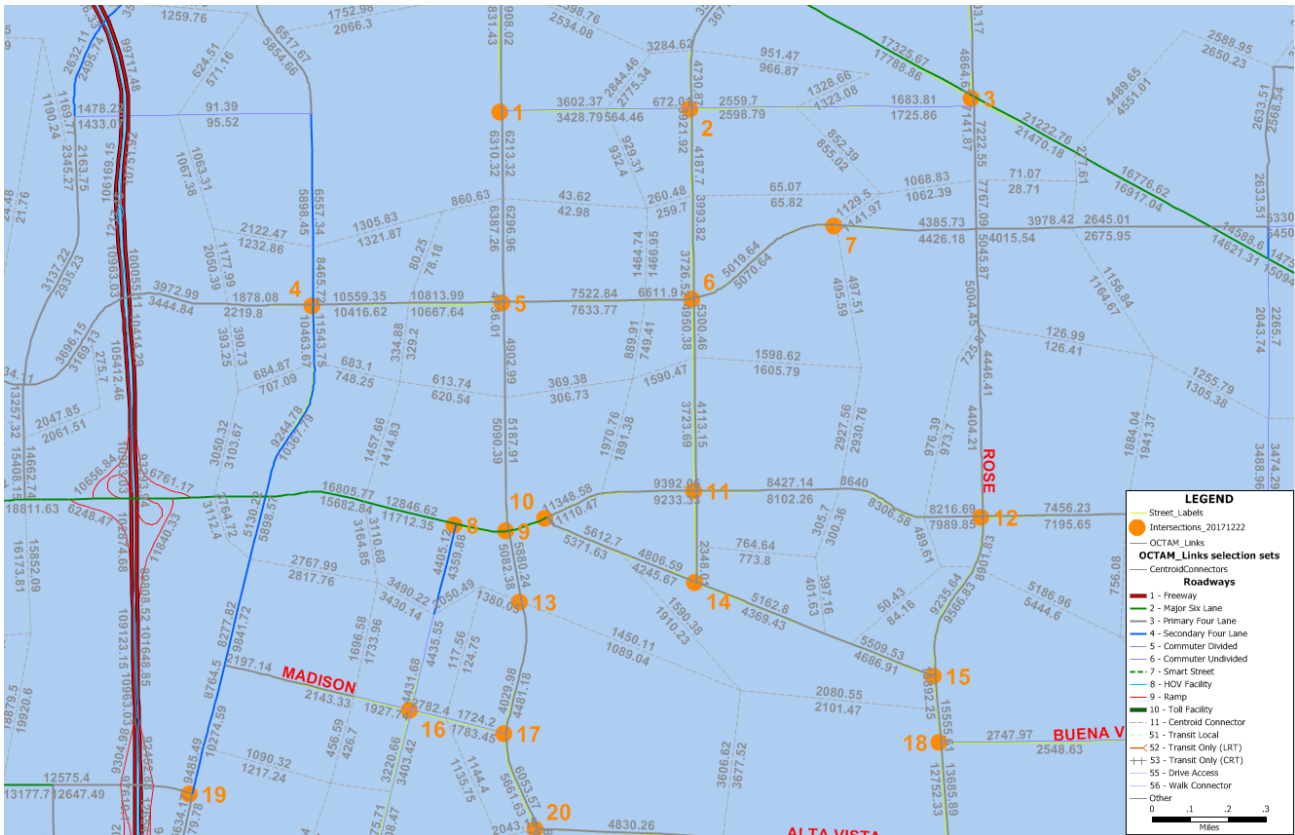
# Base Year PM Traffic Flow







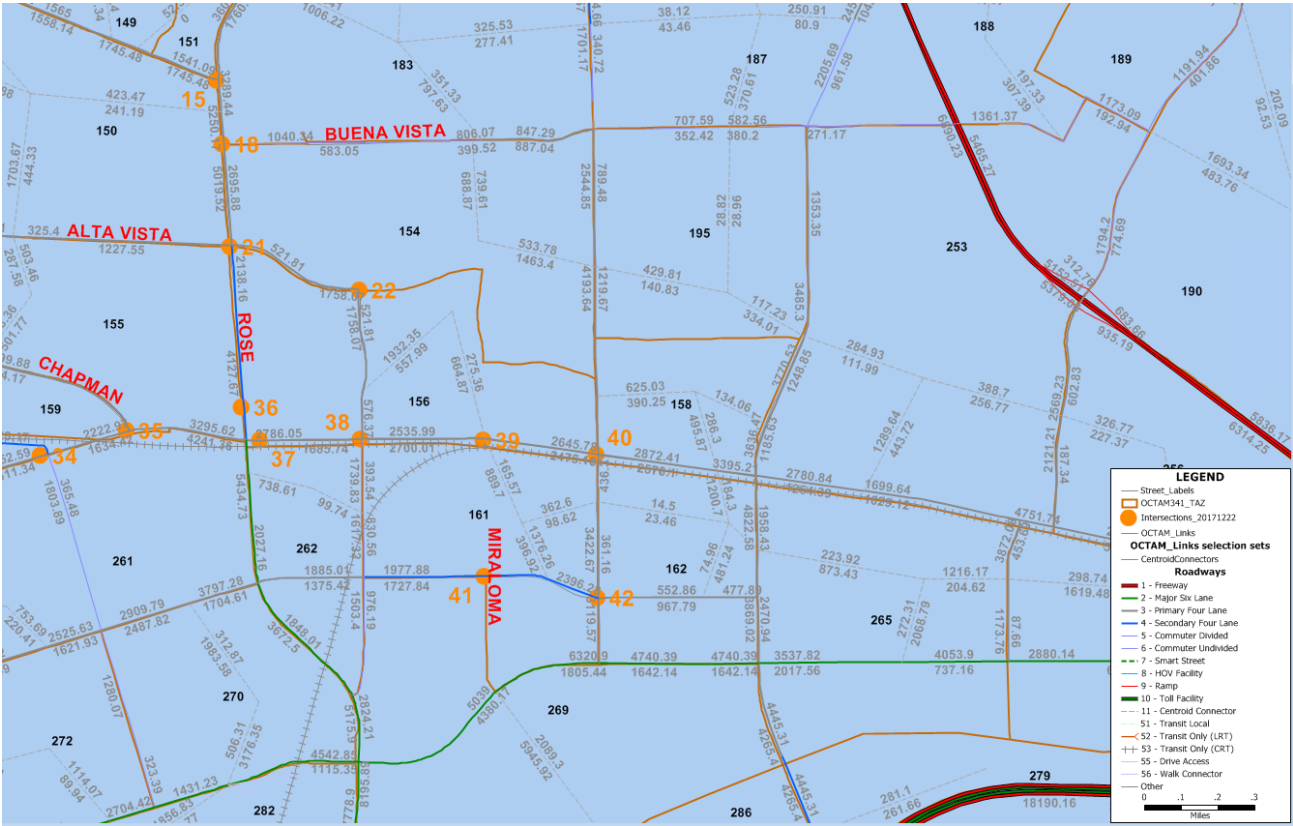
# Base Year Daily Traffic Flow





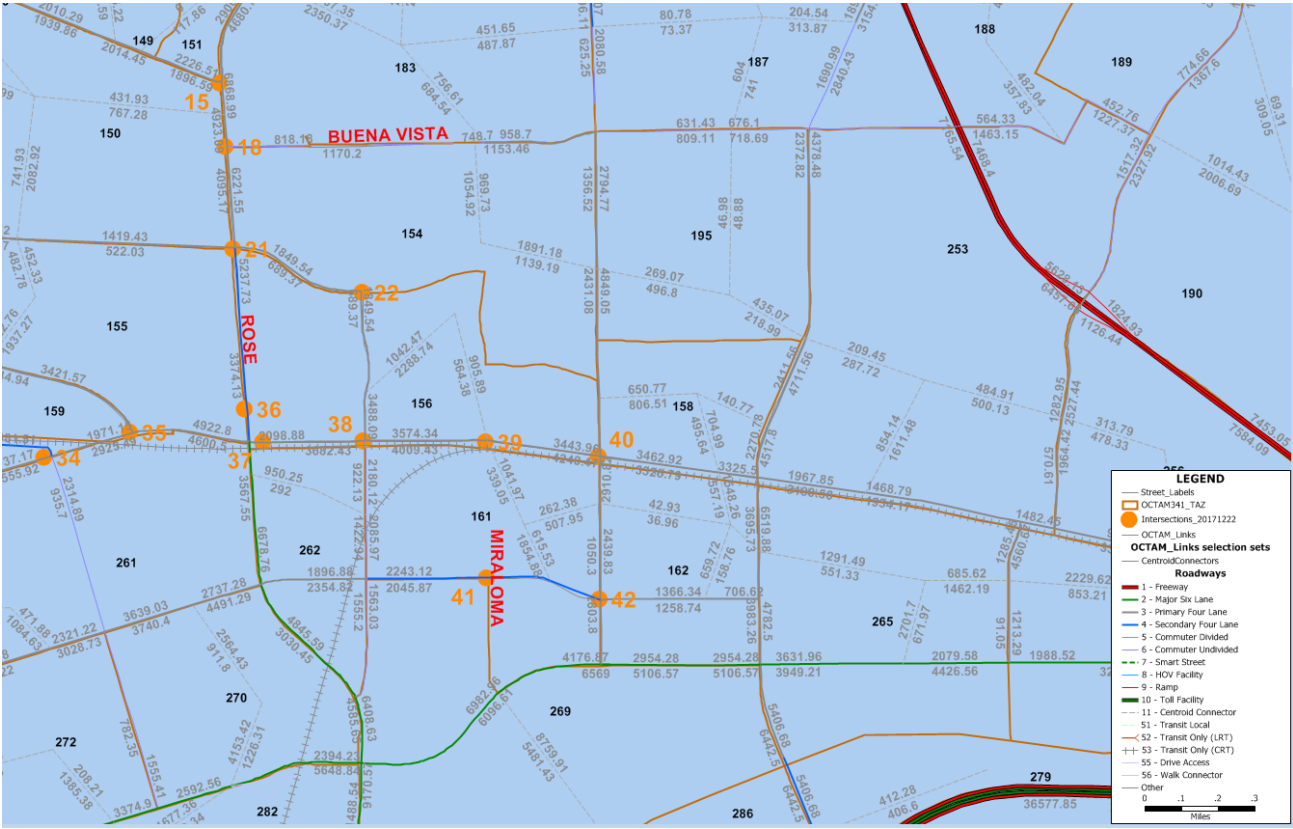
# Future Year AM Traffic Flow



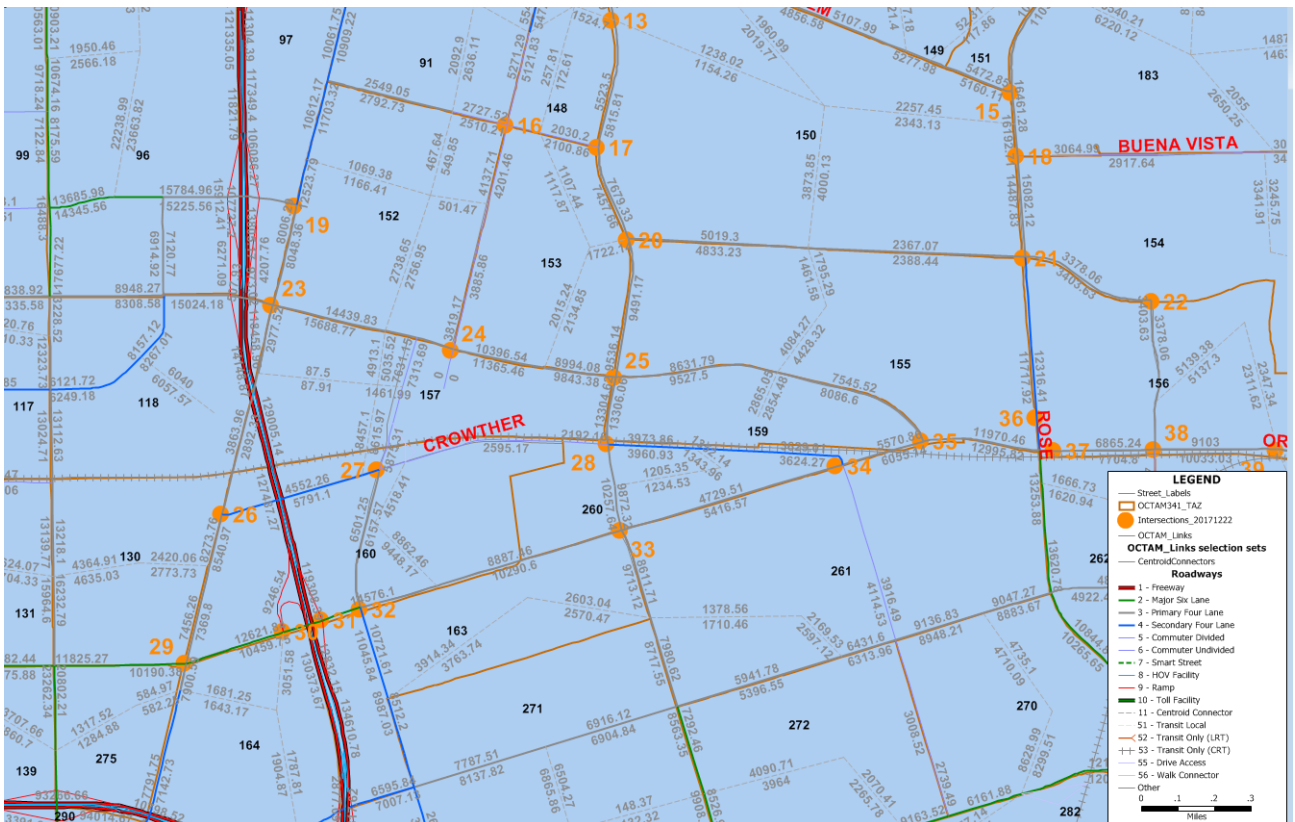
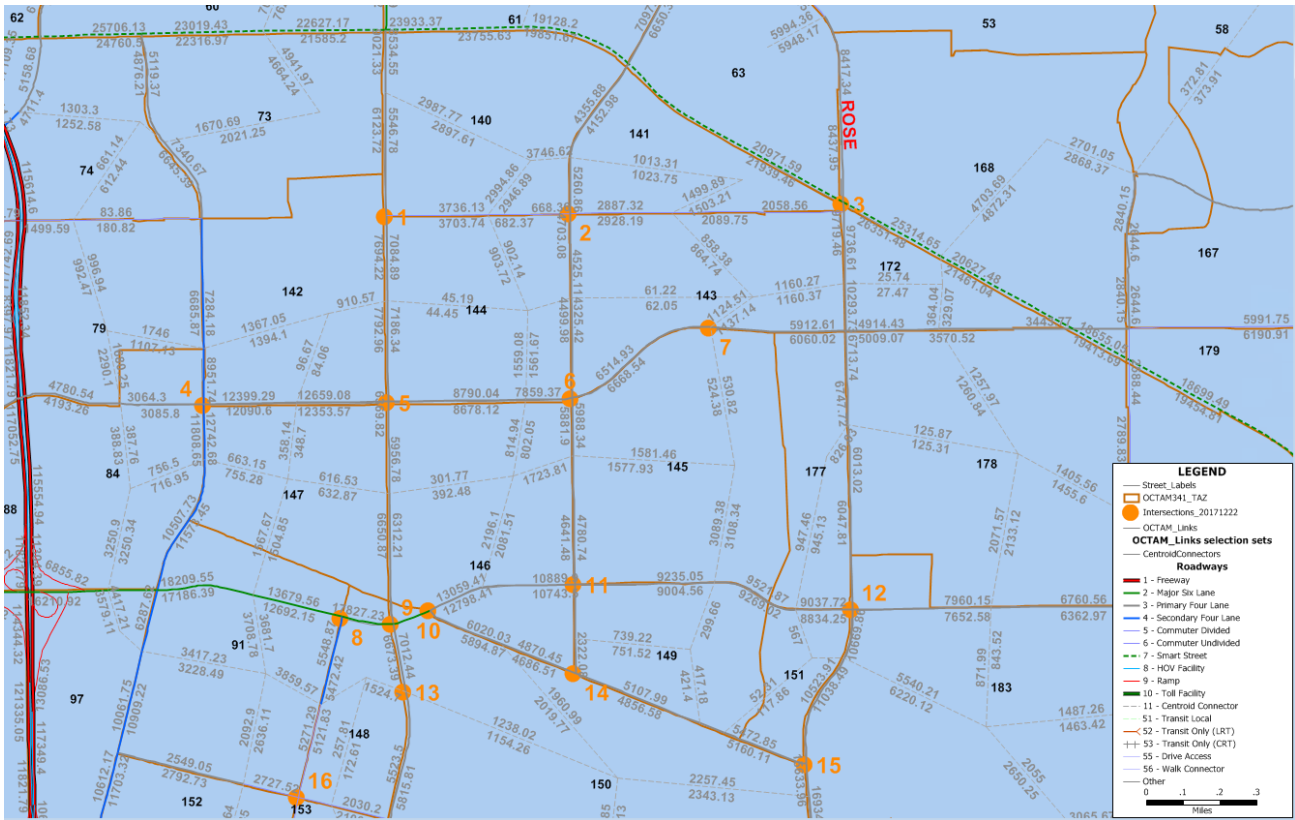


# Future Year PM Traffic Flow

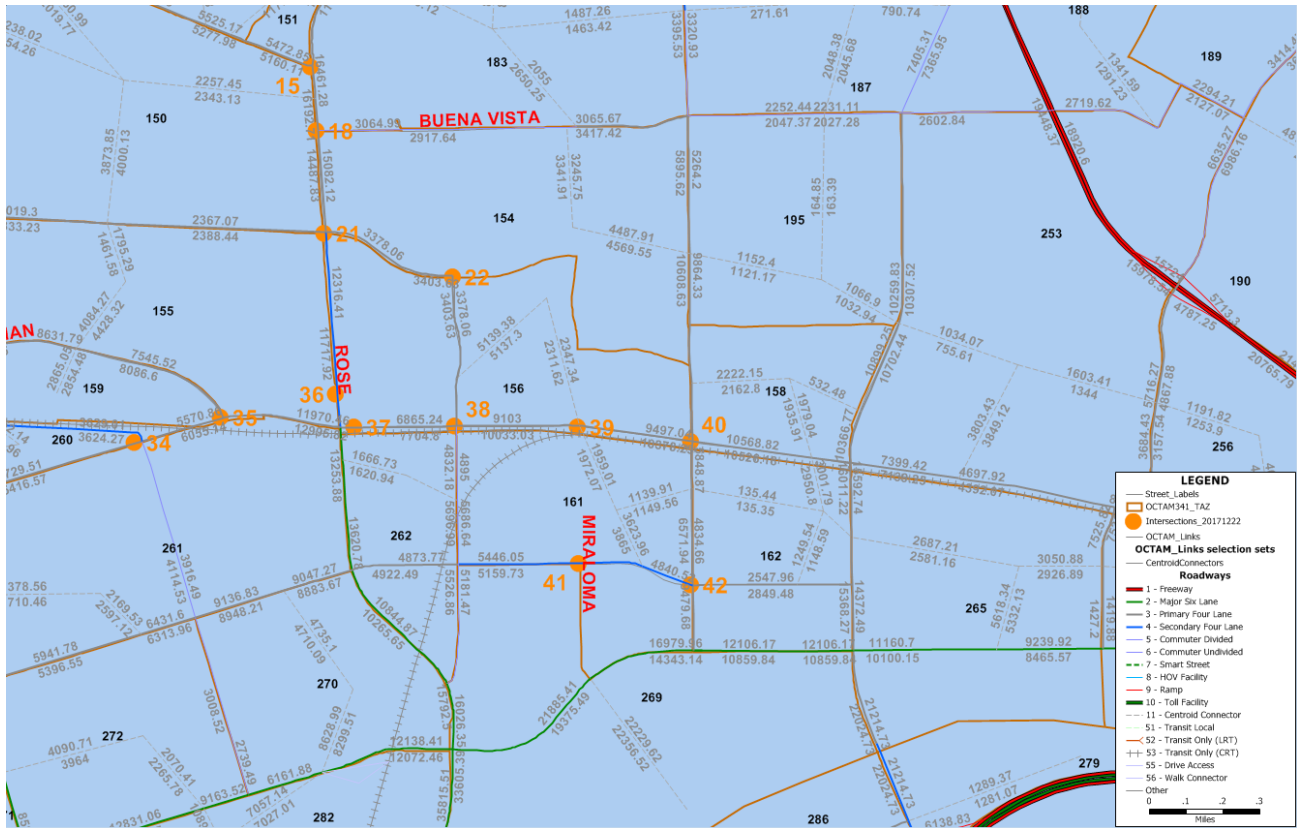




# Future Year Daily Traffic Flow







# **APPENDIX D – CURRENT GENERAL PLAN TRAFFIC VOLUME FORECASTING**

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Location (Intersection)		Link (leg)	Peak Period Volume (vph)				Diff *	0.36	Peak Hour Volume (vph)				Future Year	
			Base Year		Future Year				Future Year Diff		Existing Count			
			2012	2040	2012	2040			IN	OUT	23	28	2017	
30	SR-57 SB Ramps @ Orangethorpe Ave	N Leg	2023	1784	2203	2114	65	119	53	98	416	552	469	650
		S Leg					0	0	0	0	45	13	47	14
		E Leg	4249	4388	4827	5625	208	445	171	366	1234	995	1405	1361
		W Leg	2565	3191	3753	3419	428	82	351	67	824	959	1175	1026
		Total	8837	9363	10783	11158	701	646	575	531	2519	2519	3097	3051
31	SR-57 NB Ramps @ Orangethorpe Ave	N Leg		1294		1464	0	61	0	50	0	356	0	406
		S Leg	2567		2657		32	0	27	0	778	0	805	0
		E Leg	4594	6007	5194	7185	216	424	177	348	1193	1396	1370	1744
		W Leg	4388	4249	5625	4827	445	208	366	171	998	1217	1364	1388
		Total	11549	11550	13476	13476	694	693	570	570	2969	2969	3539	3539
32	Melrose St @ Orangethorpe Ave	N Leg	1978	703	2653	1109	243	146	200	120	610	511	810	631
		S Leg	973	3341	1059	4188	31	305	25	250	525	834	550	1084
		E Leg	2755	3074	3153	3559	143	175	118	143	833	739	951	882
		W Leg	6007	4594	7185	5194	424	216	348	177	1156	1040	1504	1217
		Total	11713	11712	14050	14050	841	842	691	691	3124	3124	3815	3815
33	Kraemer Blvd @ Orangethorpe Ave	N Leg	3897	1296	4301	1123	145	-62	119	-51	1262	652	1381	601
		S Leg	1084	3690	1088	4515	1	297	1	244	663	1399	664	1643
		E Leg	1964	1000	1853	1611	-40	220	-33	181	575	414	542	595
		W Leg	1810	2769	2529	2520	259	-90	213	-74	730	765	943	691
		Total	8755	8755	9771	9769	366	365	300	300	3230	3230	3530	3530
34	Crowther Ave/Miller Ave @ Orangethorpe Ave	N Leg	966	270	1514	423	197	55	162	45	156	104	318	149
		S Leg	238	1144	365	1804	46	238	38	195	69	345	107	540
		E Leg	2219	1045	2223	1634	1	212	1	174	637	349	638	523
		W Leg	1000	1964	1611	1853	220	-40	181	-33	424	488	605	455
		Total	4423	4423	5713	5714	464	465	381	382	1286	1286	1667	1668
35	Chapman Ave @ Orangethorpe Ave	N Leg	2277	1310	2934	1400	237	32	194	27	372	350	566	377
		S Leg					0	0	0	0	0	0	0	0
		E Leg	3297	3090	3296	4241	0	414	0	340	870	618	870	958
		W Leg	1045	2219	1634	2223	212	1	174	1	358	632	532	633
		Total	6619	6619	7864	7864	448	448	368	368	1600	1600	1968	1968
36	Rose Dr @ Del Cerro Dr	N Leg	3697	2195	4128	2138	155	-21	127	-17	1715	587	1842	570
		S Leg	2195	3697	2138	4128	-21	155	-17	127	553	1833	536	1960
		E Leg					0	0	0	0	270	118	284	124
		W Leg					0	0	0	0	0	0	0	0
		Total	5892	5892	6266	6266	135	135	111	111	2538	2538	2663	2655
37	Del Cerro Dr @ Orangethorpe Ave	N Leg					0	0	0	135	257	146	279	
		S Leg					0	0	0	0	0	0	0	
		E Leg	2583	1473	2786	1686	73	77	60	63	921	535	981	598
		W Leg	1473	2583	1686	2786	77	73	63	60	585	849	648	909
		Total	4056	4056	4472	4472	150	150	123	123	1641	1641	1775	1786
38	Jefferson St @ Orangethorpe Ave	N Leg	2483	500	3187	576	253	27	208	22	285	122	493	144
		S Leg	364	1468	394	1740	11	98	9	80	93	200	102	280
		E Leg	2678	2446	2536	2700	-51	91	-42	75	896	580	897	688
		W Leg	1473	2583	1686	2786	77	73	63	60	549	921	643	1030
		Total	6998	6997	7803	7802	290	290	238	238	1823	1823	2134	2143
39	Van Buren St @ Orangethorpe Ave	N Leg					0	0	0	450	112	461	115	
		S Leg					0	0	0	0	93	324	95	332
		E Leg	2718	2204	2646	2475	-26	98	-21	80	795	554	774	634
		W Leg	2446	2678	2700	2534	91	-52	75	-43	550	898	625	855
		Total	5164	4882	5346	5009	66	46	54	38	1888	1888	1956	1937
40	Richfield Rd @ Orangethorpe Ave	N Leg	3681	1187	4495	1286	293	36	241	29	501	239	742	268
		S Leg	406	2723	436	3771	11	377	9	310	175	539	184	849
		E Leg	2769	2431	2872	2576	37	52	30	43	882	561	912	604
		W Leg	2204	2718	2475	2645	98	-26	80	-22	566	785	646	763
		Total	9060	9059	10278	10278	438	439	360	360	2124	2124	2484	2484
41	Van Buren St @ Miraloma Ave	N Leg					0	0	0	311	102	327	107	
		S Leg					0	0	0	0	101	334	106	351
		E Leg	1773	1716	1978	1728	74	4	61	4	187	218	260	233
		W Leg	1716	1773	1728	1978	4	74	4	61	268	213	285	287
		Total	3489	3489	3706	3706	78	78	64	64	867	867	978	978
42	Richfield Rd @ Miraloma Ave	N Leg	2387	335	3423	361	373	9	306	8	451	199	757	207
		S Leg	1503	2062	1702	3120	72	381	59	313	179	389	238	702
		E Leg	494	798	553	968	21	61	17	50	165	201	164	226
		W Leg	852	2041	1167	2396	113	128	93	105	189	195	254	270
		Total	5236	5236	6845	6845	579	579	476	476	984	984	1413	1405





Location (Intersection)			Link (leg)	Peak Period Volume (vph)				Diff *	0.27	Peak Hour Volume (vph)							
				Base Year		Future Year				Future Year		Existing Count		Future Year			
				IN	OUT	IN	OUT			IN	OUT	IN	OUT	2017		IN	OUT
														2012	2040		
30	SR-57 SB Ramps @ Orangethorpe Ave	N Leg	1963	2776	2160	3007	53	62	44	51	354	617	398	668			
		S Leg					0	0	0	0	20	18	20	18			
		E Leg	6000	4088	7070	4625	289	145	237	119	1218	1018	1455	1137			
		W Leg	3185	4078	4051	5418	234	362	192	297	1067	1006	1259	1303			
		Total	11148	10942	13281	13050	576	569	473	468	2659	2659	3132	3127			
31	SR-57 NB Ramps @ Orangethorpe Ave	N Leg		2860		3187	0	88	0	73	0	619	0	692			
		S Leg	3254		3344		24	0	20	0	846	0	866	0			
		E Leg	7685	6167	9084	6796	378	170	310	140	1438	1499	1748	1639			
		W Leg	4088	6000	4625	7070	145	289	119	237	1027	1193	1146	1430			
		Total	15027	15027	17053	17053	547	547	449	449	3311	3311	3760	3760			
32	Melrose St @ Orangethorpe Ave	N Leg	895	1616	1567	2298	181	184	149	151	425	469	574	620			
		S Leg	4140	1741	5180	2212	281	127	231	104	828	414	1059	518			
		E Leg	4034	4194	4716	4666	184	127	151	105	795	1081	946	1186			
		W Leg	6167	7685	6796	9084	170	378	140	310	1229	1313	1369	1623			
		Total	15236	15236	18259	18260	816	816	670	671	3277	3277	3947	3948			
33	Kraemer Blvd @ Orangethorpe Ave	N Leg	2354	4803	2283	5237	-19	117	-16	96	640	1198	624	1294			
		S Leg	4374	2129	5282	2197	245	18	201	15	1309	737	1510	752			
		E Leg	1309	2606	1737	2556	116	-14	95	-11	490	819	585	808			
		W Leg	3922	2422	3819	3132	-28	192	-23	157	1094	779	1071	936			
		Total	11959	11960	13121	13122	314	314	258	258	3533	3533	3791	3791			
34	Crowther Ave/Miller Ave @ Orangethorpe Ave	N Leg	640	1299	838	2082	53	211	44	174	124	186	168	360			
		S Leg	1555	693	2315	936	205	66	169	54	397	147	566	201			
		E Leg	1466	2967	1971	2925	136	-11	112	-9	407	881	519	872			
		W Leg	2606	1309	2556	1737	-14	116	-11	95	724	438	713	533			
		Total	6267	6268	7680	7680	382	381	313	313	1652	1652	1965	1965			
35	Chapman Ave @ Orangethorpe Ave	N Leg	1848	2442	2145	3422	80	265	66	217	329	405	395	622			
		S Leg					0	0	0	0	0	0	0	0			
		E Leg	3494	4402	4923	4601	386	54	317	44	726	1117	1043	1161			
		W Leg	2967	1466	2925	1971	-11	136	-9	112	878	411	869	523			
		Total	8309	8310	9993	9994	455	455	373	373	1933	1933	2306	2306			
36	Rose Dr @ Del Cerro Dr	N Leg	3199	4524	3374	5238	47	193	39	158	1033	1460	1072	1618			
		S Leg	4524	3199	5238	3374	193	47	158	39	1458	1056	1616	1095			
		E Leg					0	0	0	0	235	210	235	210			
		W Leg					0	0	0	0	0	0	0	0			
		Total	7723	7723	8612	8612	240	240	197	197	2726	2726	2923	2923			
37	Del Cerro Dr @ Orangethorpe Ave	N Leg					0	0	0	0	215	237	215	237			
		S Leg					0	0	0	0	0	0	0	0			
		E Leg	1757	3232	2099	3682	92	122	76	100	580	974	656	1074			
		W Leg	3232	1757	3682	2099	122	92	100	76	1034	618	1134	694			
		Total	4989	4989	5781	5781	214	214	176	176	1829	1829	2005	2005			
38	Jefferson St @ Orangethorpe Ave	N Leg	996	3170	1082	3488	23	86	19	71	143	337	162	408			
		S Leg	1840	750	2180	922	92	46	75	38	317	88	392	126			
		E Leg	3226	3616	3574	4009	94	106	77	87	676	1039	791	1182			
		W Leg	3232	1757	3682	2099	122	92	100	76	1032	704	1188	819			
		Total	9294	9293	10518	10518	330	331	271	272	2168	2168	2534	2535			
39	Van Buren St @ Orangethorpe Ave	N Leg					0	0	0	0	183	330	183	330			
		S Leg					0	0	0	0	265	136	265	136			
		E Leg	2974	3724	3444	4240	127	139	104	114	653	989	757	1103			
		W Leg	3616	3226	4009	3574	106	94	87	77	1044	690	1131	767			
		Total	6590	6950	7453	7814	233	233	191	192	2145	2145	2336	2337			
40	Richfield Rd @ Orangethorpe Ave	N Leg	1985	3942	2609	5182	168	335	138	275	252	500	390	775			
		S Leg	2236	937	2911	1270	182	90	150	74	442	248	592	322			
		E Leg	3225	3318	3463	3327	64	2	53	2	691	970	744	972			
		W Leg	3724	2973	4240	3444	139	127	114	104	959	626	1073	730			
		Total	11170	11170	13223	13223	554	554	455	455	2344	2344	2799	2799			
41	Van Buren St @ Miraloma Ave	N Leg					0	0	0	0	180	261	180	261			
		S Leg					0	0	0	0	210	188	210	188			
		E Leg	2078	2024	2243	2046	45	6	37	5	280	228	332	245			
		W Leg	2024	2078	2046	2243	6	45	5	37	317	310	338	364			
		Total	4102	4102	4289	4289	50	50	41	41	987	987	1060	1057			
42	Richfield Rd @ Miraloma Ave	N Leg	741	1775	1050	2440	83	180	69	147	290	381	359	528			
		S Leg	2053	2139	3044	2804	268	180	220	147	317	268	537	415			
		E Leg	1121	1260	1366	1259	66	0	54	0	221	202	248	182			
		W Leg	2207	949	2462	1420	69	127	57	104	245	222	271	294			
		Total	6122	6123	7922	7923	486	486	399	399	1073	1073	1415	1419			



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Golden Ave Time Period: Weekday AM

Future Link Inputs			Existing Counts			Turn Move Inputs		
North			North			SR		
44	1082	621	44	1082	621	9	661	113
24	359	218	24	359	218	8	170	13
Average			Average			ER		
1158	577	2041	1158	577	2041	12	501	82
In - Out			In - Out			NL		
2041	2041	2041	2041	2041	2041	22	501	82

Average In-out volumes

Link Inputs		
North		
44	1082	621
24	359	218
Average		
1158	577	2041
In - Out		
2041	2041	0

From	To N	To S	To E	To W	RowTl	Target	2	To N	To S	To E	To W	
From N	0	661	113	9	783	1082	2	0	913	156	12	
From S	501	0	82	22	605	577		477	0	78	21	
From E	170	183	0	13	366	359		167	179	0	13	
From W	8	12	4	0	24	24		8	12	4	0	
	To N	To S	To E	To W				CoTot	652	1105	238	46
								Target	621	1158	218	44
From N	0	958	143	12	1112	1082		0	931	139	12	
From S	455	0	72	20	546	577		480	0	76	21	
From E	159	188	0	12	359	359		159	188	0	12	
From W	8	13	4	0	24	24		8	13	4	0	
	To N	To S	To E	To W				CoTot	646	1132	218	45
								Target	621	1158	218	44
From N	0	941	131	10	1082	1082		0	940	131	10	
From S	471	0	83	22	576	577		471	0	83	22	
From E	143	204	0	12	359	359		143	204	0	12	
From W	7	14	4	0	24	24		7	14	4	0	
	To N	To S	To E	To W				CoTot	621	1158	218	44
								Target	621	1158	218	44

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	SR	EL	ER	WL	WT	WR		
Existing	22	501	82	113	661	9	8	4	12	183	13	170
2040	22	471	83	131	940	10	8	3	13	204	11	143
Existing + 10 pct	24	551	90	124	727	9	8	4	13	201	14	187
Max (2040, exist + 10pct)	24	551	90	131	940	10	8	4	13	204	14	187

Future Link outputs			Future volume			Turn Move Inputs		
North			North			SR		
48	1081	746	48	1081	746	10	940	131
25	405	225	25	405	225	8	187	14
Diff			Diff			ER		
1157	668	2176	1157	668	2176	13	204	11
In - Out			In - Out			NL		
2176	2176	0	2176	2176	0	24	551	90

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Valencia Ave at Golden Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North				Average											
330	591	237	301	44	156	88	292	60	335	39	42	SR	ST	SL	WR
292	617	301	300	156	88	292	292	44	156	88	42	EL	ET	WL	WT
In - Out 1484 1484								NL NT NR 87 212 86							

Average In-out volumes

Link Inputs			
North			
330	591	237	301
292	617	301	300
In - Out 1484 1484 0			

1	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	335	39	60	434	591	0	456	53	82	
From S	212	0	86	87	385	301	166	0	67	68	
From E	42	42	0	192	276	301	46	46	0	209	
From W	44	88	156	0	288	292	45	89	158	0	
	To N	To S	To E	To W			CoTot	256	591	278	359
							Target	237	617	300	330
From N	0	477	57	75	609	591	0	462	56	73	
From S	153	0	72	63	288	301	160	0	76	65	
From E	42	48	0	192	282	301	45	51	0	205	
From W	41	93	170	0	304	292	39	89	163	0	
	To N	To S	To E	To W			CoTot	245	602	294	343
							Target	237	617	300	330
From N	0	470	55	66	591	591	0	470	55	66	1,000
From S	156	0	81	64	301	301	156	0	81	64	1,000
From E	44	56	0	200	301	301	44	56	0	200	1,000
From W	36	92	164	0	292	292	36	92	164	0	1,000
	To N	To S	To E	To W			CoTot	237	617	300	330
							Target	237	617	300	330
							Pct	1,000	1,000	1,000	1,000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	87	212	86	39	335	60	44	156	88	42	192	42
2040	63	156	80	55	409	66	36	163	91	55	200	44
Existing + 10 pct	95	233	94	42	368	66	48	171	96	46	211	46
Max (2040, exist + 10pct)	95	233	94	55	469	66	48	171	96	55	211	46

Future Link outputs				Future volume				Turn Move Inputs							
North															
372	590	327	312	48	171	96	211	66	469	55	46	SR	ST	SL	WR
215	620	422	320	96	171	96	211	48	171	96	46	EL	ET	WL	WT
In - Out 1639 1639 0								NL NT NR 95 233 94							

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Rose Dr at Imperial Hwy Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South							
1738	1609	686	2181	29	1079	1318	249	24	476	747	563
1999			2707	1079				SR	ST	SL	WR
	1273	614		194				ET		WT	WL
			Average					ER		NR	
In - Out	6404	6404	6404					NL	NT	NR	
								224	175	148	

Average In-out volumes

Link Inputs			
North			
1738	1609	686	2181
1999			2707
	1273	614	
In - Out	6404	6404	0

1	From N	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	476	747	24	1247	1609		0	614	964	31	
From S	175	0	148	224	547	614		197	0	166	282	
From E	563	249	0	1318	2130	2181		577	255	0	1350	
From W	29	194	1079	0	1302	1999		45	298	1657	0	
	To N	To S	To E	To W				CoITot	818	1167	2787	1632
								Target	686	1273	2707	1738
From N	0	670	936	33	1639	1609		0	658	919	32	
From N	0	663	914	33	1609	1609		0	663	914	33	1,000
From S	170	0	166	278	614	614		170	0	166	278	1,000
From E	477	277	0	1427	2181	2181		477	277	0	1427	1,000
From W	38	333	1628	0	1999	1999		38	333	1628	0	1,000
	To N	To S	To E	To W				CoITot	686	1273	2707	1738
								Target	686	1273	2707	1738

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	SR	EL	ET	ER	WL	WT	WR
Existing	224	175	148	747	476	24	29	1079	194	249	1318
2040	278	170	165	913	663	32	31	1186	213	273	1449
Existing + 10 pct	246	192	162	821	523	26	31	1186	213	273	1449
Max (2040, exist + 10pct)	278	192	165	913	663	32	31	1186	213	276	1449

Future Link outputs				Future volume				Turn Move Inputs			
North				South							
1759	1608	849	2344	38	1627	333	276	32	663	913	619
1998			2705	333				EL	ET	WR	1449
	1272	638						ER		WL	276
			Diff					NL	NT	NR	
In - Out	6585	6585	0					278	192	165	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Placentia Ave at Bastanchury Rd Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North															
998	730	312	1249	46	658	174	120	24	405	163	210	502	198	30	500
979	1038	484	1096	658	174	120	120	SR	ST	SL	EL	SL	WR	WT	81
Average															
In - Out	3443	3443	3443												

Average In-out volumes

Link Inputs			
North			
998	730	312	1249
979	1038	484	1096
In - Out	3443	3443	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	405	163	24	592	730	0	500	201	30	30
From S	207	0	151	120	478	484	210	0	153	122	122
From E	81	296	0	726	1103	1249	92	335	0	822	822
From W	46	174	658	0	878	979	51	194	734	0	834
	To N	To S	To E	To W			CoTot	353	1029	1088	973
							Target	312	1038	1096	998
From N	0	502	198	30	730	730	0	502	198	30	30
From S	185	0	154	125	464	484	193	0	161	130	130
From E	81	338	0	843	1262	1249	80	335	0	834	834
From W	45	196	739	0	980	979	45	195	738	0	834
	To N	To S	To E	To W			CoTot	319	1030	1100	994
							Target	312	1038	1096	998
From N	0	502	198	30	730	730	0	502	198	30	30
From S	190	0	162	133	484	484	190	0	162	133	133
From E	77	337	0	835	1249	1249	77	337	0	835	835
From W	44	199	736	0	979	979	44	199	736	0	835
	To N	To S	To E	To W			CoTot	312	1038	1096	997
							Target	312	1038	1096	998

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	120	207	151	163	405	24	46	658	174	296	726	81
2040	132	227	166	179	445	26	50	723	191	325	798	89
Existing + 10 pct	132	227	166	179	445	26	50	723	191	325	798	89
Max (2040, exist + 10pct)	132	227	166	179	445	26	50	723	191	325	798	89

Future Link outputs				Future volume				Turn Move Inputs							
North															
996	730	366	1259	50	736	198	132	30	502	198	210	502	198	30	500
984	1036	525	1100	198	198	198	198	SR	ST	SL	EL	SL	WR	WT	89
Diff															
In - Out	3498	3498	0												

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West  
 Intersection: Kraemer Blvd at Bastanchury Rd  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North		Average						North		East	
1250	1262	730		1101		192	706	61			
1143			1347	731		202	644	175	202	644	175
						EL	ET	ER	SL	ST	SR
In - Out	4237	4237	4237			NL	NT	NR	WL	WT	WR
						162	487	149	154	154	66

**Average In-out volumes**

Link Inputs				Turn Move Inputs			
North		Average					
1250	1262	730		1101		192	706
1143			1347	731		202	644
						EL	ET
In - Out	4237	4237	0			NL	NT
						162	487

From	To N	To S	To E	To W	RowT	Target	To N	To S	To E	To W
From N	0	706	61	192	959	1262	0	929	80	253
From S	487	0	149	162	798	731	446	0	137	148
From E	66	126	0	751	943	1101	77	147	0	877
From W	202	175	644	0	1021	1143	226	196	721	0
From W							226	196	721	0
CoTTot							749	1272	938	1278
Target							730	1347	910	1250
From N	0	960	71	231	1262	1262	0	960	71	231
From S	440	0	137	154	731	731	440	0	137	154
From E	72	164	0	865	1101	1101	72	164	0	865
From W	217	223	703	0	1143	1143	217	223	703	0
From W							217	223	703	0
CoTTot							730	1347	911	1250
Target							730	1347	910	1250
Pct	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	162	487	149	61	706	192	202	644	175	126	751	66
2040	154	440	136	70	959	231	217	702	223	163	864	72
Existing + 10 pct	178	535	163	67	776	211	222	708	192	138	826	72
Max (2040, exist + 10pct)	178	535	163	70	959	231	222	708	223	163	864	72

Future Link outputs				Future volume				Turn Move Inputs			
North		Diff						North		East	
1273	1260	829		1099		231	959	70			
1153			1345	876		222	708	163	222	708	163
						EL	ET	ER	SL	ST	SR
In - Out	4388	4388	0			NL	NT	NR	WL	WT	WR
						178	535	163	154	154	72

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Valencia Ave at Bastanchury Rd Time Period: Weekday AM

Future Link Inputs			Existing Counts			Turn Move Inputs		
North			East			South		
1072	725	299	1184	72	111	426	37	111
958			804	576	EL	SL	WR	41
	1090	396		255	ET	WT	736	
					ER	WL	247	
					NL	NT	NR	
In - Out	3264	3264	Average		69	269	99	

Average In-out volumes

Link Inputs		
North		
1072	725	299
958		
	1090	396
In - Out	3264	3264

From	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W	
From N	0	426	37	111	574	725		0	538	47	140	
From S	269	0	99	69	437	396		244	0	90	63	
From E	41	247	0	736	1024	1184		219	0	107	70	
From W	72	255	576	0	903	958		76	271	611	0	
	To N	To S	To E	To W				CoTot	368	1094	748	1054
								Target	299	1090	804	1072
From N	0	536	50	143	729	725		0	533	50	142	
From S	198	0	97	64	358	396		219	0	107	70	
From E	38	284	0	866	1188	1184		38	283	0	862	
From W	62	269	657	0	988	958		60	261	637	0	
	To N	To S	To E	To W				CoTot	318	1078	794	1075
								Target	299	1090	804	1072
From N	0	536	50	139	725	725		0	536	50	139	
From S	209	0	114	73	396	396		209	0	114	73	
From E	35	290	0	859	1184	1184		35	290	0	859	
From W	54	264	640	0	958	958		54	264	640	0	
	To N	To S	To E	To W				CoTot	299	1090	804	1072
								Target	299	1090	804	1072
								Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	69	269	99	37	426	111	72	576	255	247	736
2040	73	209	113	49	536	139	89	640	264	289	859
Existing + 10 pct	75	295	108	40	468	122	79	633	280	271	809
Max (2040, exist + 10pct)	75	295	113	49	536	139	79	640	280	289	859

Future Link outputs			Future volume			Turn Move Inputs		
North			East			South		
1073	724	419	1193	79	139	536	49	139
999			802	640	280	EL	SL	45
	1105	483		280		ET	WT	859
						ER	WL	289
						NL	NT	NR
In - Out	3399	3399	Diff	75	295	113		

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: McCormac Bastanchury Rd Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				East				West			
1080	92	70	1085	9	663	29	1083	15	25	41	25
793	94	149	868	663	29	1083	9	663	29	1083	
Average				Average				Average			
In - Out	2120	2111	2115	In - Out	2115	2115	0	SR	ST	SL	WR
								EL	ET	WL	WT
								ER	NR	NR	NR
								35	27	69	

Average In-out volumes

Link Inputs			
North			
1082	92	70	1083
791	94	149	870
In - Out	2115	2115	0

From	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	25	41	15	81	92	0	28	47	17	17
From S	27	0	69	35	131	149	31	0	79	40	40
From E	25	28	0	870	923	1083	29	33	0	1021	0
From W	9	29	663	0	701	791	10	33	748	0	0
	To N	To S	To E	To W			CoTot	70	94	873	1078
							Target	70	94	870	1082
From N	0	28	46	17	92	92	0	28	46	17	17
From S	31	0	78	40	149	149	31	0	78	40	40
From E	29	33	0	1025	1087	1083	29	33	0	1021	0
From W	10	33	745	0	788	791	10	33	748	0	0
	To N	To S	To E	To W			CoTot	70	94	873	1079
							Target	70	94	870	1082

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	35	27	69	41	25	15	9	663	29	28	870	25
2040	41	30	76	45	28	17	10	747	33	31	1022	28
Existing + 10 pct	38	29	75	45	27	16	9	729	31	30	957	27
Max (2040, exist + 10pct)	41	30	76	45	28	17	10	747	33	31	1,022	28

Future Link outputs				Future volume				Turn Move Inputs			
North				East				West			
1080	90	68	1081	10	747	29	1022	17	28	45	28
790	92	147	868	33	747	33	1022	SR	ST	SL	WR
In - Out				In - Out				In - Out			
	2108	2108	0		2108	2108	0	EL	ET	WL	WT
								ER	NR	NR	NR
								41	30	76	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Bradford Ave at Yorba Linda Blvd Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
1424	200	148	1624	19	25	66	94	27	83	103	76
985	442	456	1248	805	19	66	94	27	83	103	76
Average											
In - Out	3266	3262	3264	161	50	233	161	50	233	161	50

Average In-out volumes

Link Inputs			
North			
1425	200	148	1624
985	442	455	1249
In - Out	3264	3264	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	66	94	25	185	200	0	71	101	27	27
From S	50	0	233	161	444	455	51	0	255	149	148
From E	68	191	0	1236	1495	1624	77	292	0	1256	1624
From W	19	47	805	0	871	985	20	66	898	0	985
	To N	To S	To E	To W			ColTot	148	442	1249	1425
							Target	148	442	1249	1425
From N	0	84	94	21	200	200	0	84	94	21	21
From S	51	0	255	149	455	455	51	0	255	149	148
From E	77	291	0	1255	1623	1624	77	291	0	1256	1624
From W	20	67	899	0	986	985	20	67	898	0	985
	To N	To S	To E	To W			ColTot	148	442	1247	1427
							Target	148	442	1249	1425
From N	0	84	95	21	200	200	0	84	95	21	21
From S	51	0	256	148	455	455	51	0	256	148	148
From E	77	292	0	1256	1624	1624	77	292	0	1256	1624
From W	20	66	898	0	985	985	20	66	898	0	985
	To N	To S	To E	To W			ColTot	148	442	1249	1425
							Target	148	442	1249	1425

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	161	50	233	161	444	455	19	805	47	191	1236	68
2040	148	51	255	94	83	21	19	898	66	291	1255	76
Existing + 10 pct	177	55	256	103	72	27	20	885	51	210	1359	74
Max (2040, exist + 10pct)	177	55	256	103	83	27	20	898	66	291	1,359	76

Future Link outputs				Future volume				Turn Move Inputs				
North												
1563	213	151	1726	20	27	83	103	27	83	103	76	
984	440	488	1257	808	19	66	94	27	83	103	76	
Diff												
In - Out	3411	3411	0	177	55	256	103	72	27	20	885	51



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Yorba Linda Blvd Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				East				West			
1661	1454	671	1533	230	720	166	230	720	166	230	720
1268	1383	767	1307	214	799	131	214	799	131	214	799
Average				Average				Average			
In - Out	5023	5022	5023	208	375	194	208	375	194	208	375

Average In-out volumes

Link Inputs			
North			
1661	1454	671	1533
1268	1383	767	1307
In - Out	5023	5023	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	720	166	230	1116	1454	0	938	216	300	300
From S	375	0	164	208	747	767	385	0	168	214	214
From E	131	194	0	1093	1418	1533	142	210	0	1182	1182
From W	214	139	799	0	1152	1268	236	153	879	0	0
	To N	To S	To E	To W			CoTot	762	1301	1264	1695
							Target	671	1383	1307	1661
From N	0	975	211	268	1454	1454	0	975	211	268	268
From S	353	0	191	223	767	767	353	0	191	223	223
From E	123	241	0	1170	1533	1533	123	241	0	1170	1170
From W	195	168	905	0	1268	1268	195	168	905	0	0
	To N	To S	To E	To W			CoTot	671	1383	1307	1661
							Target	671	1383	1307	1661
From N	0	975	211	268	1454	1454	0	975	211	268	268
From S	353	0	191	223	767	767	353	0	191	223	223
From E	123	241	0	1170	1533	1533	123	241	0	1170	1170
From W	195	168	905	0	1268	1268	195	168	905	0	0
	To N	To S	To E	To W			CoTot	671	1383	1307	1661
							Target	671	1383	1307	1661
							Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	208	375	164	166	720	230	214	799	139	194	1093	131
2040	223	352	191	210	974	268	195	904	167	240	1169	123
Existing + 10 pct	228	412	180	182	792	253	235	878	152	213	1202	144
Max (2040, exist + 10pct)	228	412	191	210	974	268	235	904	167	240	1202	144

Future Link outputs				Future volume				Turn Move Inputs			
North				East				West			
1698	1452	791	1586	235	974	210	235	974	210	235	974
1306	1381	831	1305	214	904	144	214	904	144	214	904
Diff				Diff				Diff			
In - Out	5175	5175	0	228	412	191	228	412	191	228	412



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project
Intersection: Valencia Ave at Yorba Linda Blvd Time Period: Weekday AM

Future Link Inputs, Existing Counts, Turn Move Inputs. Includes values for North, South, East, West directions and various movement types like SR, ST, EL, ET, ER, NL, NT, NR.

Average In-out volumes. Shows average flow for In-Out directions.

Main traffic volume table with 20 rows (1-20) and columns for From (N, S, E, W), To (N, S, E, W), RowT, Target, and ColTot/Target. Includes a color-coded legend at the bottom right.

Turn Movements and Traffic Volumes. Summary table for Existing, 2040, Existing + 10 pct, and Max (2040, exist + 10pct) scenarios across various movement types.

Future Link outputs and Future volume. Shows projected outputs for North/South and Turn Move Inputs for the future scenario.

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West  
 Intersection: Rose Dr at Yorba Linda Blvd  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North				North				North							
861	1296	747	1065	92	536	51	91	820	132	91	1043	91	820	132	91
795	1400	740	886	536	51	91	820	132	91	1043	1295	ST	SL	SL	151
Average				Average				Average							
In - Out	3895	3894	3894	In - Out	3895	3894	3894	ET	ER	WT	671	ER	WL	WL	260
								NL							
								NT							
								NR							
								92							
								475							
								142							
								886							

Average In-out volumes

Link Inputs			
North			
861	1295	747	1064
795	1400	740	886
Average			
In - Out	3894	3894	0

From	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	820	132	91	1043	1295	0	1018	164	113	
From S	475	0	142	92	709	740	496	0	148	96	
From E	151	260	0	671	1082	1064	149	256	0	660	
From W	92	51	536	0	679	795	108	60	627	0	
	To N	To S	To E	To W			CoTot	752	1334	940	869
							Target	747	1400	886	861
From N	0	1069	155	112	1336	1295	0	1037	150	109	
From S	492	0	140	95	727	740	501	0	142	97	
From E	148	268	0	654	1070	1064	147	267	0	651	
From W	107	63	592	0	762	795	112	65	618	0	
	To N	To S	To E	To W			CoTot	759	1369	910	856
							Target	747	1400	886	861
From N	0	1052	136	107	1295	1295	0	1052	136	107	1,000
From S	497	0	139	103	740	740	498	0	139	103	1,000
From E	137	276	0	651	1064	1064	137	276	0	651	1,000
From W	112	72	611	0	795	795	112	72	611	0	1,000
	To N	To S	To E	To W			CoTot	747	1400	886	861
							Target	747	1400	886	861
							Pct	1,000	1,000	1,000	1,000

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	SL	SR	EL	ER	WL	WT	WR
Existing	92	475	142	132	820	91	92	536	51	260	671
2040	102	497	139	136	1052	106	610	72	275	651	137
Existing + 10 pct	101	522	156	145	902	100	101	589	56	286	738
Max (2040, exist + 10pct)	102	522	156	145	1,052	106	111	610	72	286	166

Future Link outputs				Future volume				Turn Move Inputs			
North				North				North			
946	1303	799	1190	111	610	72	106	1052	136	107	166
793	1410	780	911	610	72	611	106	139	103	740	738
Average				Average				Average			
In - Out	4066	4066	0	In - Out	4066	4066	0	ET	ER	WT	286
								NL			
								NT			
								NR			
								102			
								522			
								156			
								145			
								1,052			
								106			
								111			
								610			
								72			
								286			
								738			
								166			

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project
Intersection: Morse Ave at Kraemer Blvd Time Period: Weekday AM

Future Link Inputs, Existing Counts, Turn Move Inputs

Average In-out volumes, Link Inputs

Main traffic volume forecast table with 20 rows, columns for From/To directions and Target values

Turn Movements and Traffic Volumes summary table

Future Link outputs, Future volume, Turn Move Inputs



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Palm Dr at Rose Dr Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
305	1411	855	34	53	1203	4	53	SR	ST	SL	4
698	2011	1041	13	2	566	2	0	EL	ET	WL	9
Average				Average				Average			
In - Out	3184	3184	3184	In - Out	316	758	7	NR	NT	NR	11

Average In-out volumes

Link Inputs			
North			
305	1411	855	34
698	2011	1041	13
In - Out	3184	3184	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	1203	4	53	1260	1411	0	1348	4	59	304
From S	758	0	7	316	1081	1041	730	0	7	304	0
From E	9	14	0	11	34	34	9	14	0	11	0
From W	53	566	2	0	621	698	60	636	2	0	0
	To N	To S	To E	To W			CoTot	798	1998	13	375
							Target	855	2011	13	305
From N	0	1357	4	48	1409	1411	0	1359	4	48	48
From S	781	0	7	248	1035	1041	785	0	7	249	0
From E	10	14	0	9	33	34	10	15	0	9	0
From W	64	640	2	0	706	698	63	633	2	0	0
	To N	To S	To E	To W			CoTot	858	2006	13	307
							Target	855	2011	13	305
From N	0	1361	4	47	1412	1411	0	1360	4	47	1,000
From S	784	0	7	249	1039	1041	785	0	7	250	1,000
From E	10	15	0	9	34	34	10	15	0	9	1,000
From W	61	635	2	0	698	698	61	635	2	0	1,000
	To N	To S	To E	To W			CoTot	855	2011	13	306
							Target	855	2011	13	305

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	316	758	7	4	1203	53	53	2	566	14	11	9
2040	249	784	6	4	1360	46	60	2	635	15	9	9
Existing + 10 pct	347	833	7	4	1323	58	58	2	622	15	12	9
Max (2040, exist + 10pct)	347	833	7	4	1360	58	60	2	635	15	12	9

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
417	1422	902	36	60	1360	4	53	SR	ST	SL	4
697	2010	1187	13	2	635	2	0	EL	ET	WL	9
Diff				Diff				Diff			
In - Out	3342	3342	0	In - Out	347	833	7	NR	NT	NR	11

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Madison Ave at Bradford Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
304	508	415	507	76	91	70	64	83	312	79	64
328	747	527	405	91	ET	WT	138	SR	ST	WR	64
Average				70	ER	WL	257	EL	EL	WL	138
In - Out				1871	1871	1871		NL	NT	NR	
				63	265	200		63	265	200	

Average In-out volumes

Link Inputs			
North			
303	508	415	507
328	747	527	405
Average			
In - Out			
1871	1871	1871	0

From	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	312	79	83	474	508	0	334	85	89	
From S	265	0	200	63	528	527	265	0	200	63	
From E	64	257	0	138	459	507	71	284	0	152	
From W	76	70	91	0	237	328	105	97	126	0	
							CoTTot	441	715	411	304
							Target	415	747	405	303
From N	0	349	84	89	522	508	0	340	81	86	
From S	249	0	197	63	509	527	258	0	204	65	
From E	67	297	0	152	515	507	66	292	0	150	
From W	99	101	124	0	325	328	100	102	126	0	
							CoTTot	424	734	411	301
							Target	415	747	405	303

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	SL	SR	EL	ER	WL	WT	WR
Existing	63	265	200	79	312	83	76	91	70	257	138
2040	67	255	203	77	344	86	97	123	107	295	149
Existing + 10 pct	69	291	220	86	343	91	83	100	77	282	151
Max (2040, exist + 10pct)	69	291	220	86	344	91	97	123	107	295	151

Future Link outputs				Future volume				Turn Move Inputs			
North											
311	521	458	516	97	123	107	295	91	344	86	70
327	746	580	429	107	ER	WL	295	SR	ST	WR	70
Average				107	NL	NT	NR	EL	EL	WL	151
In - Out				1944	1944	1944		69	291	220	
				1944	1944	1944		69	291	220	



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Madison Ave at Kraemer Blvd Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North		South		North		South		SR		SL	
539	1672	859	172	110	197	1136	17	110	1136	17	55
447	1791	944	38	15	ET	WT	92	119	311	16	0
Average				287	ER	WL	15	240	670	4	
In - Out	3235	3227	3231		NL	NT	NR				

Average In-out volumes

Link Inputs			
North		South	
540	1670	860	171
447	1793	943	38
In - Out	3231	3231	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	1136	17	197	1350	1670	0	1405	21	244	
From S	670	0	4	240	914	943	691	0	4	248	
From E	55	15	0	92	162	171	58	16	0	97	
From W	110	287	15	0	412	447	119	311	16	0	
	To N	To S	To E	To W			CoTot	869	1732	41	589
							Target	860	1793	38	540
From N	0	1455	19	223	1698	1670	0	1431	19	220	
From S	684	0	4	227	915	943	705	0	4	234	
From E	58	16	0	89	163	171	60	17	0	94	
From W	118	322	15	0	455	447	116	316	15	0	
	To N	To S	To E	To W			CoTot	881	1764	38	547
							Target	860	1793	38	540
From N	0	1447	19	204	1670	1670	0	1447	19	204	1,000
From S	697	0	4	242	943	943	697	0	4	242	1,000
From E	58	19	0	94	171	171	58	19	0	94	1,000
From W	105	327	15	0	447	447	105	327	15	0	1,000
	To N	To S	To E	To W			CoTot	860	1793	38	540
							Target	860	1793	38	540

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	240	670	4	17	1136	197	110	15	287	15	92	55
2040	241	696	4	18	1447	203	104	14	326	18	94	58
Existing + 10 pct	264	737	4	18	1249	216	121	16	315	16	101	60
Max (2040, exist + 10pct)	264	737	4	18	1,447	216	121	16	326	18	101	60

Future Link outputs				Future volume				Turn Move Inputs			
North		South		North		South		SR		SL	
581	1681	918	179	121	1447	18	121	1447	18	204	
463	1791	1008	38	16	ET	WT	94	119	311	16	0
Diff				326	ER	WL	18	240	670	4	
In - Out	3328	3328	0		NL	NT	NR				

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Buena Vista Av at Rose Dr Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				North				SR			
0	2042	1034	571	0	1676	139	0	0	1676	139	0
0	0	0	355	0	0	0	0	0	0	0	0
0	2220	996	355	0	0	0	0	0	0	0	0
Average				Average				Average			
In - Out	3610	3609	3609	In - Out	3610	3609	3609	In - Out	835	168	240

Average In-out volumes

Link Inputs			
North			
0	2042	1034	571
0	0	0	355
0	2220	996	355
In - Out	3609	3609	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	1676	139	0	1815	2042	0	1886	156	0	0
From S	835	0	168	0	1003	996	830	0	167	0	0
From E	240	315	0	0	555	571	247	324	0	0	0
From W	0	0	0	0	0	0	0	0	0	0	0
	To N	To S	To E	To W			CoTot	1076	2210	323	0
							Target	1034	2220	356	0
From N	0	1894	172	0	2066	2042	0	1872	170	0	0
From S	797	0	184	0	981	996	810	0	186	0	0
From E	237	325	0	0	562	571	241	330	0	0	0
From W	0	0	0	0	0	0	0	0	0	0	0
	To N	To S	To E	To W			CoTot	1051	2202	356	0
							Target	1034	2220	356	0
From N	0	1879	164	0	2043	2042	0	1879	164	0	0
From S	804	0	192	0	996	996	805	0	192	0	0
From E	230	341	0	0	571	571	230	341	0	0	0
From W	0	0	0	0	0	0	0	0	0	0	0
	To N	To S	To E	To W			CoTot	1034	2220	356	0
							Target	1034	2220	356	0

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	0	835	168	139	1676	0	0	0	315	0	240
2040	0	804	191	163	1878	0	0	0	340	0	229
Existing + 10 pct	0	918	184	152	1843	0	0	0	346	0	264
Max (2040, exist + 10pct)	0	918	191	163	1878	0	0	0	346	0	264

Future Link outputs				Future volume				Turn Move Inputs			
North				North				SR			
0	2041	1182	610	0	1878	163	0	0	1878	163	0
0	0	0	354	0	0	0	0	0	0	0	0
0	2224	1109	354	0	0	0	0	0	0	0	0
Diff				Diff				Diff			
In - Out	3760	3760	0	In - Out	3760	3760	0	In - Out	918	191	0

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Nutwood Ave at Placencia Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North															
865	1365	526	254	123	18	96	116	558	660	3	3	SR	ST	SL	EL
278	995	589	93	18	96	116	116	123	18	96	116	EL	ET	ER	WL
Average												NR	NT	NR	NR
In - Out	2487	2480	2483									116	339	68	68

Average In-out volumes

Link Inputs			
North			
866	1363	527	254
278	997	588	93
In - Out	2483	2483	0

1	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	660	3	558	1221	1363	0	737	3	623	3
From S	339	0	68	116	523	588	381	0	77	131	172
From E	5	73	0	165	243	254	5	76	0	172	0
From W	123	96	18	0	237	278	144	113	21	0	0
	To N	To S	To E	To W			CoTot	531	926	101	926
							Target	527	997	93	866
From N	0	794	3	583	1379	1363	0	784	3	576	3
From S	379	0	71	122	571	588	390	0	73	126	165
From E	5	82	0	161	248	254	5	84	0	165	0
From W	143	121	19	0	284	278	140	119	19	0	0
	To N	To S	To E	To W			CoTot	536	987	95	866
							Target	527	997	93	866
From N	0	789	3	571	1363	1363	0	789	3	571	3
From S	386	0	72	131	588	588	386	0	72	131	172
From E	5	85	0	164	254	254	5	85	0	164	0
From W	136	123	19	0	278	278	136	123	19	0	0
	To N	To S	To E	To W			CoTot	529	996	93	866
							Target	527	997	93	866

Turn Movements and Traffic Volumes													
Year	NL	NT	NR	SL	SL	SR	EL	EL	ER	WL	WT	WR	
Existing	116	339	68	3	660	558	123	18	96	73	165	5	
2040	130	385	71	2	789	571	136	18	123	84	163	5	
Existing + 10 pct	127	372	74	3	726	613	135	19	105	80	181	5	
Max (2040, exist + 10pct)	130	385	74	3	789	613	136	19	123	84	181	5	

Future Link outputs				Future volume				Turn Move Inputs							
North															
924	1405	526	270	136	136	136	136	613	789	3	3	SR	ST	SL	EL
278	996	589	96	19	19	123	123	19	19	123	123	EL	ET	ER	WL
Diff												NR	NT	NR	NR
In - Out	2542	2542	0									130	385	74	74

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Alta Vista St Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
450	1779	951	623	115	133	1061	252	133	1061	252	133
417			572	199	ET			SR	ST	SL	326
	1513	655		39	ER			EL	WR	WT	154
					NR			SL	WL	WL	155
					NL	NT	NR				
In - Out	3474	3487	3480		23	480	97				

Average In-out volumes

Link Inputs			
North			
449	1782	949	624
418			571
	1511	656	
In - Out	3480	3480	0

From	To N	To S	To E	To W	RowT	Target	From	To N	To S	To E	To W
From N	0	1061	232	133	1426	1782	From N	0	1326	290	166
From S	480	0	97	23	600	656	From S	525	0	106	25
From E	326	155	0	154	635	624	From E	320	152	0	151
From W	115	39	199	0	353	418	From W	136	46	236	0
	To N	To S	To E	To W			CoTot	981	1525	632	343
							Target	949	1511	571	449
From N	0	1314	248	220	1782	1782	From N	0	1314	248	220
From S	523	0	98	36	656	656	From S	523	0	98	36
From E	286	145	0	193	624	624	From E	286	145	0	193
From W	141	51	226	0	418	418	From W	141	51	226	0
	To N	To S	To E	To W			CoTot	950	1510	571	449
							Target	949	1511	571	449
From N	0	1314	248	220	1782	1782	From N	0	1314	248	220
From S	523	0	98	36	656	656	From S	523	0	98	36
From E	286	145	0	193	624	624	From E	286	145	0	193
From W	141	51	226	0	418	418	From W	141	51	226	0
	To N	To S	To E	To W			CoTot	949	1511	571	449
							Target	949	1511	571	449
							Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	23	480	97	252	1061	133	115	199	39	155	154
2040	35	522	97	248	1314	220	141	225	51	145	192
Existing + 10 pct	25	528	106	255	1167	146	126	218	42	170	169
Max (2040, exist + 10pct)	35	528	106	255	1314	220	141	225	51	170	192

Future Link outputs				Future volume				Turn Move Inputs			
North											
447	1789	1027	720	141	220	1314	255	141	225	51	358
417			586	199	ET			EL	WR	WT	192
	1535	669		39	ER			SL	WL	WL	170
					NR			SL	NR		
In - Out	3595	3595	0		35	528	106				

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Rose Dr at Alta Vista St Time Period: Weekday AM

Future Link Inputs			Existing Counts			Turn Move Inputs		
North			South			East		
651	2061	969	506	271	311	1406	115	311
827	1879	659	552	241	ET	SL	WR	125
Average			Average			Average		
In - Out	4052	4052	4052	747	827	ET	WR	275
						ER	WL	111
						NL	NT	NR
						86	580	10

Average In-out volumes

Link Inputs		
North		
651	2061	970
827	1880	659
In - Out	4052	4052

From	To N	To S	To E	To W	RowT	Target	From	To N	To S	To E	To W
From N	0	1406	115	311	1832	2061	From N	0	1581	129	350
From S	580	0	10	86	676	659	From S	566	0	10	84
From E	125	111	0	275	511	506	From E	124	110	0	272
From W	271	235	241	0	747	827	From W	300	260	267	0
	To N	To S	To E	To W			CoTot	989	1951	406	706
							Target	970	1880	552	651
From N	0	1523	176	323	2022	2061	From N	0	1552	179	329
From S	554	0	13	77	645	659	From S	567	0	14	79
From E	121	106	0	251	478	506	From E	128	112	0	265
From W	294	250	363	0	907	827	From W	268	228	331	0
	To N	To S	To E	To W			CoTot	963	1893	523	673
							Target	970	1880	552	651
From N	0	1549	194	317	2058	2061	From N	0	1549	194	317
From S	572	0	14	75	661	659	From S	570	0	14	75
From E	133	113	0	259	505	506	From E	133	113	0	259
From W	265	219	344	0	828	827	From W	264	219	343	0
	To N	To S	To E	To W			CoTot	968	1881	552	651
							Target	970	1880	552	651

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	86	580	10	115	1406	311	271	241	235	111	275
2040	74	570	14	194	1548	342	298	343	218	112	288
Existing + 10 pct	94	638	11	126	1546	342	298	265	258	122	302
Max (2040, exist + 10pct)	94	638	14	194	1,548	342	298	343	258	122	302

Future Link outputs			Future volume			Turn Move Inputs		
North			South			East		
738	2084	1073	561	298	342	1548	194	317
899	1928	746	551	298	343	EL	WR	137
Diff			Diff			Diff		
In - Out	4290	4290	0	258	258	ER	WL	122
						NL	NT	NR
						94	638	14

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West  
 Intersection: Jefferson St at Alta Vista St  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs			Existing Counts			Turn Move Inputs		
North			North			SR		
435	104	43	451	22	50	35	5	5
570	403	139	352	230	EL	ST	SL	WR
Average			Average			ET		
In - Out			In - Out			ER		
1264	1233	1248	101	102	NL	NT	NR	50
						98		

**Average In-out volumes**

Link Inputs			Link Outputs		
North			North		
440	102	43	446	408	137
563	408	137	357		
In - Out			In - Out		
1248	1248	0			

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W	RowTl	Target
From N	0	35	5	50	90	102	From N	0	40	6	57	102	102
From S	10	0	36	98	144	137	From S	10	0	34	93	137	137
From E	5	50	0	292	347	446	From E	5	50	0	375	446	446
From W	22	132	230	0	384	563	From W	22	194	337	0	563	563
							CoTot	48	298	377	525		
							Target	43	408	357	440		
From N	0	55	5	48	108	102	From N	0	52	5	45	102	102
From S	9	0	32	78	119	137	From S	9	0	37	90	137	137
From E	6	88	0	314	408	446	From E	6	96	0	343	446	446
From W	29	265	319	0	613	563	From W	26	244	293	0	563	563
							CoTot	43	392	335	479		
							Target	43	408	357	440		
From N	0	54	5	42	101	102	From N	0	54	5	42	102	102
From S	10	0	40	83	132	137	From S	10	0	41	86	137	137
From E	6	100	0	316	422	446	From E	7	106	0	333	446	446
From W	27	254	312	0	592	563	From W	25	241	296	0	563	563
							CoTot	42	402	343	461		
							Target	43	408	357	440		
From N	0	56	6	40	101	102	From N	0	56	6	41	102	102
From S	10	0	43	82	135	137	From S	11	0	43	83	137	137
From E	7	107	0	318	432	446	From E	7	111	0	328	446	446
From W	26	245	308	0	579	563	From W	25	238	300	0	563	563
							CoTot	43	405	349	452		
							Target	43	408	357	440		
From N	0	56	6	40	102	102	From N	0	57	6	40	102	102
From S	11	0	44	81	136	137	From S	11	0	45	81	137	137
From E	7	112	0	320	438	446	From E	7	114	0	325	446	446
From W	25	240	307	0	572	563	From W	25	236	302	0	563	563
							CoTot	43	406	353	446		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	45	80	136	137	From S	11	0	45	81	137	137
From E	7	114	0	321	442	446	From E	7	115	0	324	446	446
From W	25	237	306	0	568	563	From W	25	235	303	0	563	563
							CoTot	43	407	355	443		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	115	0	321	444	446	From E	7	116	0	323	446	446
From W	25	236	305	0	566	563	From W	25	235	304	0	563	563
							CoTot	43	408	356	442		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	116	0	321	445	446	From E	7	116	0	322	446	446
From W	25	235	305	0	564	563	From W	25	234	304	0	563	563
							CoTot	43	408	356	441		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	116	0	322	445	446	From E	7	116	0	322	446	446
From W	25	234	305	0	564	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	441		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	305	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		
							Target	43	408	357	440		
From N	0	57	6	39	102	102	From N	0	57	6	39	102	102
From S	11	0	46	80	137	137	From S	11	0	46	80	137	137
From E	7	117	0	322	446	446	From E	7	117	0	322	446	446
From W	25	234	304	0	563	563	From W	25	234	304	0	563	563
							CoTot	43	408	357	440		

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Placenta Ave at Chapman Ave Time Period: Weekday AM

Future Link Inputs			Existing Counts			Turn Move Inputs		
North			North			North		
1106	954	573	893	141	157	530	101	157
930	995	792	895	502	EL	ST	SL	SL
		Average		161	ET	WR	WT	66
In - Out	3570	3570		265	ER	WL	WR	87
					NL	NT	NR	92
					265	297	92	

**Average In-out volumes**

Link Inputs		
North		
1106	954	573
930	995	792
		Average
In - Out	3570	3570
		0

1	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	530	101	157	788	954	0	642	122	190	
From S	297	0	92	265	654	792	360	0	111	321	
From E	69	87	0	666	822	893	75	94	0	723	
From W	141	161	502	0	804	930	163	186	581	0	
	To N	To S	To E	To W			CoTot	598	923	815	1234
							Target	573	995	895	1106
From N	0	692	134	170	997	954	0	663	129	163	
From S	345	0	122	288	755	792	362	0	129	302	
From E	72	102	0	648	822	893	78	111	0	704	
From W	156	201	639	0	996	930	146	188	597	0	
	To N	To S	To E	To W			CoTot	586	961	854	1169
							Target	573	995	895	1106
From N	0	679	136	140	954	954	0	679	136	140	
From S	362	0	148	283	792	792	362	0	148	283	
From E	81	128	0	683	893	893	81	128	0	683	
From W	131	187	612	0	930	930	131	187	612	0	
	To N	To S	To E	To W			CoTot	573	995	895	1106
							Target	573	995	895	1106
							Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	SR	EL	ER	WL	WR			
Existing	265	297	92	101	530	157	141	502	161	87	666	69
2040	282	361	147	135	678	139	130	612	187	128	683	80
Existing + 10 pct	291	326	101	111	583	172	155	552	177	95	732	75
Max (2040, exist + 10pct)	291	361	147	135	678	172	155	612	187	128	732	80

Future Link outputs			Future volume			Turn Move Inputs		
North			North			North		
1195	985	596	894	155	172	678	135	172
954	993	799	894	612	EL	ST	SL	SL
		Diff		187	ET	WR	WT	80
In - Out	3678	3678		291	ER	WL	WR	732
					NL	NT	NR	128
					291	361	147	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Bradford Ave at Chapman Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs				
North				South				East				
1090	591	665	1031	201	196	86	201	196	86	201	196	86
783	315	366	699	439	17	273	439	17	273	439	17	273
Average				Average				Average				
In - Out	2773	2769	2771	2771	2771	2771	2771	2771	2771	2771	2771	2771

Average In-out volumes

Link Inputs			
North			
1091	591	665	1030
784	315	366	700
In - Out	2771	2771	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W	
From N	0	196	86	201	483	591	2	0	240	105	246	
From S	273	0	46	19	338	366		295	0	50	21	
From E	178	78	0	704	960	1030		191	84	0	756	
From W	200	17	439	0	656	784		239	20	525	0	
	To N	To S	To E	To W				CoTot	725	344	680	1022
								Target	665	315	700	1091
From N	0	220	108	262	590	591		0	220	108	262	
From S	271	0	51	22	344	366		288	0	54	23	
From E	175	77	0	806	1058	1030		170	75	0	785	
From W	219	19	540	0	778	784		221	19	544	0	
	To N	To S	To E	To W				CoTot	679	313	707	1071
								Target	665	315	700	1091
From N	0	221	102	268	591	591		0	221	102	268	
From S	286	0	54	25	365	366		286	0	54	25	
From E	159	75	0	797	1031	1030		159	75	0	797	
From W	220	20	544	0	783	784		220	20	544	0	
	To N	To S	To E	To W				CoTot	665	315	700	1090
								Target	665	315	700	1091
								Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	19	273	46	86	196	201	200	439	17	78	704	178
2040	25	286	54	101	220	268	220	543	20	74	797	158
Existing + 10 pct	20	300	50	94	215	221	220	482	18	85	774	195
Max (2040, exist + 10pct)	25	300	54	101	220	268	220	543	20	85	797	195

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
1090	589	715	1077	230	220	101	268	220	220	101	195
783	325	379	698	439	17	273	439	17	273	439	178
Diff				Diff				Diff			
In - Out	2828	2828	0	25	300	54	101	220	220	101	195



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Chapman Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North				South				East				West			
948	1446	618	756	149	311	267	205	178	962	48	178	178	962	48	178
922	1653	739	644	267	311	267	205	SR	ST	SL	SR	ST	SL	SR	ST
Average				Average				Average				Average			
In - Out 3863 3863 3863				In - Out 3863 3863 3863				In - Out 205 350 120				In - Out 205 350 120			

Average In-out volumes

Link Inputs			
North			
948	1446	618	756
922	1654	739	644
In - Out 3863 3863 0			

From	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	962	48	178	1188	1446	0	1171	58	217	217
From S	350	0	120	205	675	739	383	0	131	224	224
From E	64	174	0	504	742	756	65	177	0	514	514
From W	149	267	311	0	727	922	189	339	394	0	0
	To N	To S	To E	To W			CoTot	637	1687	584	955
							Target	618	1654	644	948
From N	0	1148	64	215	1428	1446	0	1163	65	218	218
From S	371	0	145	223	739	739	371	0	145	223	223
From E	63	174	0	510	747	756	64	176	0	516	516
From W	183	332	435	0	950	922	178	322	422	0	0
	To N	To S	To E	To W			CoTot	613	1661	632	957
							Target	618	1654	644	948
From N	0	1162	68	217	1446	1446	0	1162	68	217	217
From S	374	0	148	217	739	739	374	0	148	217	217
From E	66	176	0	514	756	756	66	176	0	514	514
From W	178	315	429	0	922	922	178	315	429	0	0
	To N	To S	To E	To W			CoTot	617	1654	643	949
							Target	618	1654	644	948
							Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	205	350	120	48	962	178	149	311	267	174	504
2040	217	373	147	67	1162	216	178	428	315	176	514
Existing + 10 pct	225	385	132	52	1058	195	163	342	293	191	554
Max (2040, exist + 10pct)	225	385	147	67	1,162	216	178	428	315	191	554

Future Link outputs

North				South				East				West			
995	1445	633	815	178	428	315	225	216	1162	67	216	216	1162	67	216
921	1668	757	642	315	315	267	225	SR	ST	SL	SR	ST	SL	SR	ST
In - Out 3938 3938				In - Out 3938 3938				In - Out 225 385 147				In - Out 225 385 147			





Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Crowther Ave Time Period: Weekday AM

Future Link Inputs		Existing Counts		Turn Move Inputs	
North	708	1703	187	128	1206
307	1703	187	23	SR	SL
254	1378	582	53	EL	WT
			46	ER	WL
				NL	NT
				57	577
In - Out	2726	2726	2726		

Average In-out volumes

Link Inputs	
North	708
307	1703
254	1378
	582
In - Out	2726

From	To N	To S	To E	To W	RowTt	Target	2 To N	To S	To E	To W
From N	0	1206	119	128	1453	1703	0	1414	140	150
From S	577	0	3	57	637	582	527	0	3	52
From E	44	0	0	95	139	187	59	0	0	128
From W	23	46	53	0	122	254	48	96	110	0
	To N	To S	To E	To W			CoTot	634	1510	253
							Target	708	1378	334

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	SR	EL	ER	WL	WT	WR
Existing	57	577	3	119	1206	128	53	46	0	44
2040	30	550	2	212	1315	175	71	63	0	84
Existing + 10 pct	62	634	3	130	1326	140	25	58	0	104
Max (2040, exist + 10pct)	62	634	3	212	1326	175	71	63	0	104

Future Link outputs		Future volume		Turn Move Inputs	
North	789	1713	188	175	1326
341	1713	188	71	SR	SL
253	1389	582	119	EL	WT
			63	ER	WL
				NL	NT
				62	634
In - Out	2853	2853	0		

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Placenta Ave at Orangethorpe Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				North				North			
796	792	984	896	175	512	33	37	229	320	148	175
1221	619	601	1110	512	33	37	229	320	148	175	
Average				Average				Average			
In - Out	3510	3509	3510								

Average In-out volumes

Link Inputs			
North			
796	792	984	896
1221	619	601	1110
In - Out	3510	3510	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	320	148	229	697	792	0	364	168	260	260
From S	275	0	99	37	411	601	402	0	145	54	54
From E	193	89	0	546	828	896	299	96	0	591	591
From W	175	33	512	0	720	1221	297	56	868	0	0
	To N	To S	To E	To W			CoTot	908	516	1181	905
							Target	984	619	1110	796
From N	0	426	151	215	792	792	0	426	151	215	215
From S	423	0	132	45	601	601	423	0	132	45	46
From E	237	124	0	535	896	896	237	124	0	536	536
From W	325	69	827	0	1221	1221	325	69	826	0	0
	To N	To S	To E	To W			CoTot	984	619	1110	796
							Target	984	619	1110	796
From N	0	426	151	215	792	792	0	426	151	215	1,000
From S	423	0	132	45	601	601	423	0	132	45	1,000
From E	237	124	0	535	896	896	237	124	0	535	1,000
From W	325	69	827	0	1221	1221	325	69	827	0	1,000
	To N	To S	To E	To W			CoTot	984	619	1110	796
							Target	984	619	1110	796
							Pct	1,000	1,000	1,000	1,000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	37	275	99	148	320	229	175	512	33	89	546	193
2040	45	422	132	151	425	214	324	826	69	123	535	236
Existing + 10 pct	40	302	108	162	352	251	192	563	36	97	600	212
Max (2040, exist + 10pct)	45	422	132	162	425	251	324	826	69	123	600	236

Future Link outputs				Future volume				Turn Move Inputs			
North				North				North			
896	838	982	959	324	826	69	123	251	425	162	236
1219	617	599	1120	826	69	123	236	324	826	69	123
In - Out	3615	3615	0								

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
Intersection: SR-57 SB Ramp at Orangethorpe Ave Time Period: Weekday AM

Future Link Inputs, Existing Counts, Turn Move Inputs, Average In-out volumes

Table with 20 rows (1-20) and columns for From N, To N, To S, To E, To W, RowT, Target, To N, To S, To E, To W, ColTot, Target. Includes a color-coded summary row at the bottom.

Turn Movements and Traffic Volumes table with columns for Year, NL, NT, NR, SL, SR, EL, ER, WL, WT, WR and rows for Existing, 2040, Existing + 10 pct, and Max (2040, exist + 10pct).

Future Link outputs, Future volume, Turn Move Inputs

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: SR-57 NB Rm at Orangethorpe Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
1388	0	406	1370	138	0	0	218	SR	ST	SL	WR
1364	0	805	1744	860	0	0	975	EL	WT		
				0	0	0	0	ER	WL		
In - Out	3539	3539	3539					NL	NT	NR	
								242	0	536	

**Average In-out volumes**

Link Inputs			
North			
1388	0	406	1370
1364	0	805	1744
In - Out	3539	3539	0

From	To N	To S	To E	To W	Row/T	Target	2	To N	To S	To E	To W
From N	0	0	0	0	0	0		0	0	0	0
From S	0	0	536	242	778	805		0	0	554	250
From E	218	0	0	975	1193	1370		250	0	0	1138
From W	138	0	860	0	998	1364		189	0	1175	0
	To N	To S	To E	To W			CoTot	439	0	1729	1370
							Target	406	0	1744	1388

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	SR	EL	ER	WL	WT	WR
Existing	242	0	536	0	0	138	860	0	975	218
2040	249	0	554	0	0	174	1189	0	1138	232
Existing + 10 pct	266	0	589	0	0	151	946	0	1072	239
Max (2040, exist + 10pct)	266	0	589	0	0	174	1,192	0	1,133	239

Future Link outputs				Future volume				Turn Move Inputs			
North											
1399	1399	413	1372	174	0	0	239	SR	ST	SL	WR
1366	1366	855	1781	1192	0	0	1133	EL	WT		
				0	0	0	0	ER	WL		
In - Out	3593	3593	0					NL	NT	NR	
								266	0	589	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West  
 Intersection: Melrose St at Orangethorpe Ave  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs				
North												
1217	810	631	951	161	393	56	161	393	56	161	393	56
1804	1084	550	882	160	629	367	160	629	367	160	629	367
Average												
In - Out	3815	3815	3815	NL	NT	NR	EL	ET	ER	WL	WT	WR
				165	306	54	165	306	54	165	306	54

Average In-out volumes

Link Inputs			
North			
1217	810	631	951
1804	1084	550	882
In - Out	3815	3815	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	393	56	161	610	810	0	522	74	214	214
From S	306	0	54	165	525	550	321	0	57	173	173
From E	45	74	0	714	833	951	51	84	0	815	815
From W	160	367	629	0	1156	1504	208	478	819	0	0
	To N	To S	To E	To W			CoTot	580	1084	950	1202
							Target	631	1084	882	1217
From N	0	515	67	228	810	810	0	515	67	228	228
From S	333	0	47	171	551	550	333	0	47	171	171
From E	54	78	0	818	951	951	54	78	0	818	818
From W	244	492	769	0	1504	1504	244	492	769	0	0
	To N	To S	To E	To W			CoTot	631	1085	883	1217
							Target	631	1084	882	1217
From N	0	514	67	228	810	810	0	514	67	228	228
From S	333	0	47	171	550	550	333	0	47	171	171
From E	54	78	0	818	951	951	54	78	0	818	818
From W	244	492	769	0	1504	1504	244	492	769	0	0
	To N	To S	To E	To W			CoTot	631	1084	882	1217
							Target	631	1084	882	1217
							Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	SL	SR	EL	ER	WL	WT	WR	
Existing	165	306	54	56	393	161	160	629	367	74	714	45
2040	170	332	47	66	514	228	244	768	491	78	818	54
Existing + 10 pct	181	336	59	61	432	177	176	691	403	81	785	49
Max (2040, exist + 10pct)	181	336	59	66	514	228	244	768	491	81	818	54

Future Link outputs				Future volume				Turn Move Inputs				
North												
1227	808	634	953	244	514	66	244	514	66	244	514	66
1503	1086	576	893	244	768	367	244	768	367	244	768	367
Diff												
In - Out	3840	3840	0	NL	NT	NR	EL	ET	ER	WL	WT	WR
				181	336	59	181	336	59	181	336	59



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Orangethorpe Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
691	1381	601	542	147	212	1012	38	212	1012	38	44
943	1643	664	595	328	ET	WR	44	328	ET	WR	399
				255	ER	WL	132	255	ER	WL	132
					NL	NT	NR		NL	NT	NR
In - Out	3530	3530	3530	154	461	48		154	461	48	

Average In-out volumes

Link Inputs			
North			
691	1381	601	542
943	1643	664	595
In - Out	3530	3530	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W	
From N	0	1012	38	212	1262	1381		0	1108	42	232	
From S	461	0	48	154	663	664		462	0	48	154	
From E	44	132	0	399	575	542		41	124	0	376	
From W	147	255	328	0	730	943		190	329	423	0	
	To N	To S	To E	To W				CoTot	693	1561	513	763
								Target	601	1643	595	691
From N	0	1153	48	181	1382	1381		0	1152	48	181	
From S	433	0	72	158	663	664		433	0	72	158	
From E	35	155	0	352	542	542		35	155	0	352	
From W	133	335	475	0	943	943		133	335	475	0	
	To N	To S	To E	To W				CoTot	602	1642	595	692
								Target	601	1643	595	691
From N	0	1153	48	181	1381	1381		0	1153	48	181	
From S	433	0	72	159	664	664		433	0	72	159	
From E	35	155	0	352	542	542		35	155	0	352	
From W	132	335	475	0	943	943		132	335	475	0	
	To N	To S	To E	To W				CoTot	601	1643	595	691
								Target	601	1643	595	691
								Pct	1.000	1.000	1.000	1.000

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	154	461	48	38	1012	212	147	328	255	132	399	44
2040	158	433	72	47	1152	181	132	474	335	155	351	35
Existing + 10 pct	169	507	52	41	1113	233	161	360	280	145	438	48
Max (2040, exist + 10pct)	169	507	72	47	1,152	233	161	474	335	155	438	48

Future Link outputs				Future volume				Turn Move Inputs			
North											
840	1432	716	641	161	233	1152	47	233	1152	47	48
970	1642	748	593	335	ET	WR	48	335	ET	WR	438
					ER	WL	155		ER	WL	155
					NL	NT	NR		NL	NT	NR
In - Out	3791	3791	0	169	507	72		169	507	72	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Crowther Ave/N at Orangethorpe Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North															
455	318	149	638	1	305	118	605	2	131	23	156	SR	ST	SL	WR
605	540	107	523	305	118	605	605	1	118	23	141	ET	ER	WT	WL
Average															
In - Out	1667	1668	1668												

Average In-out volumes

Link Inputs			
North			
455	318	149	638
605	540	107	523
In - Out	1668	1668	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	131	23	2	156	318	From N	0	267	49	3	318	318
From S	25	0	21	23	69	107	From S	44	0	34	28	107	107
From E	78	96	0	463	637	638	From E	103	111	0	424	638	638
From W	1	118	305	0	424	605	From W	2	163	440	0	605	605
	To N	To S	To E	To W				To N	To S	To E	To W		
							CoTot	149	540	523	455		
							Target	149	540	523	455		
From N	0	271	48	4	323	318	From N	0	266	49	3	318	318
From S	49	0	33	32	114	107	From S	44	0	34	28	107	107
From E	99	98	0	419	616	638	From E	103	111	0	424	638	638
From W	2	171	442	0	615	605	From W	2	163	440	0	605	605
	To N	To S	To E	To W				To N	To S	To E	To W		
							CoTot	149	540	523	455		
							Target	149	540	523	455		
From N	0	266	49	3	318	318	From N	0	266	49	3	318	318
From S	44	0	34	28	107	107	From S	44	0	34	28	107	107
From E	103	111	0	424	638	638	From E	103	111	0	424	638	638
From W	2	163	440	0	605	605	From W	2	163	440	0	605	605
	To N	To S	To E	To W				To N	To S	To E	To W		
							CoTot	149	540	523	455		
							Target	149	540	523	455		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	23	25	21	23	131	2	1	305	118	96	463	78
2040	28	44	34	48	266	3	1	440	162	111	423	103
Existing + 10 pct	25	27	23	25	144	2	1	335	129	105	509	85
Max (2040, exist + 10pct)	28	44	34	48	266	3	1	440	162	111	492	103

Future Link outputs				Future volume				Turn Move Inputs							
North															
523	317	148	706	1	305	118	605	3	266	48	103	SR	ST	SL	WR
603	539	106	522	706	522	605	605	1	118	23	141	ET	ER	WT	WL
Diff															
In - Out	1732	1732	0												





Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Del Cerro Dr at Orangethorpe Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
909	146	279	984	108	477	772	984	73	0	62	149
648	0	0	596	477	0	0	650	SR	ST	SL	WR
				0	0	0	0	EL	ET	WL	WT
								ER	NR	NR	NR
In - Out	1775	1786	1781					0	0	0	0

Average In-out volumes

Link Inputs			
North			
906	147	278	984
650	0	0	596
In - Out	1781	1781	0

1	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	0	62	73	135	147	0	0	67	79	
From S	0	0	0	0	0	0	0	0	0	0	
From E	149	0	0	772	921	984	159	0	0	826	
From W	108	0	477	0	585	650	120	0	530	0	
	To N	To S	To E	To W			CoTTot	279	0	597	904
							Target	278	0	596	906

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	0	0	0	62	73	108	477	0	0	772	984	149
2040	0	0	0	66	80	79	120	529	0	826	157	
Existing + 10 pct	0	0	0	68	80	118	524	0	0	849	163	
Max (2040, exist + 10pct)	0	0	0	68	80	120	529	0	0	849	163	

Future Link outputs				Future volume				Turn Move Inputs			
North											
929	148	283	1012	120	529	849	163	80	0	68	
649	0	0	597	0	0	0	0	SR	ST	SL	WR
								EL	ET	WL	WT
								ER	NR	NR	NR
In - Out	1809	1809	0					0	0	0	0

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West  
 Intersection: Jefferson St at Orangethorpe Ave  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				North				North			
1030	493	144	897	17	98	127	60	SR	ST	SL	56
643	280	102	688	495	ET	WT	804	ER	WL	36	
Average											
In - Out	2134	2143	2139	19	NL	NT	NR	21	58	27	

Average In-out volumes

Link Inputs			
North			
1028	494	144	898
644	280	102	687
In - Out	2139	2139	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	127	60	98	285	494	From N	0	220	104	170	504	1,000
From S	49	0	25	19	93	102	From S	54	0	27	21	102	1,000
From E	56	36	0	804	896	898	From E	56	36	0	806	898	1,000
From W	17	37	495	0	549	644	From W	20	43	581	0	644	1,000
	To N	To S	To E	To W			CoTot	130	300	712	997		
							Target	144	280	687	1028		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	19	49	25	60	127	98	17	495	37	36	804	56
2040	21	58	27	66	139	107	18	544	40	39	884	61
Existing + 10 pct	20	53	27	66	139	107	18	544	40	39	884	61
Max (2040, exist + 10pct)	21	58	27	80	205	196	26	550	44	39	884	61

Future Link outputs				Future volume				Turn Move Inputs			
North				North				North			
1101	481	145	984	26	196	205	80	SR	ST	SL	61
620	288	106	657	550	ET	WT	884	ER	WL	39	
Diff											
In - Out	2191	2191	0	21	58	27					

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West  
 Intersection: Van Buren St at Orangethorpe Ave  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				East				West			
855	461	115	774	27	484	39	484	154	248	48	35
625	332	95	634	484	39	21	50	SR	ST	SL	WR
Average				Average				Average			
In - Out	1956	1937	1946					EL	ET	ER	WL
								NL	NT	NR	WR
								21	50	22	37

Average In-out volumes

Link Inputs			
North			
860	459	115	770
622	334	95	637
In - Out	1946	1946	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	248	48	154	450	459	0	253	49	157	
From S	50	0	22	21	93	95	51	0	22	21	
From E	35	37	0	723	795	770	34	36	0	700	
From W	27	39	484	0	550	622	31	44	547	0	
	To N	To S	To E	To W			CoTot	115	333	619	879
							Target	115	334	637	860

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	21	50	22	48	248	154	27	484	39	37	723	35
2040	19	50	25	56	256	146	27	555	39	38	694	37
Existing + 10 pct	23	55	24	52	272	169	29	532	42	40	795	38
Max (2040, exist + 10pct)	23	55	25	56	272	169	40	570	47	40	792	38

Future Link outputs				Future volume				Turn Move Inputs			
North				East				West			
984	497	133	870	40	570	47	570	169	272	56	38
657	359	103	651	47	47	23	55	SR	ST	SL	WR
Diff				Diff				Diff			
In - Out	2127	2127	0					NL	NT	NR	WR
								23	55	25	37

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West  
 Intersection: Richfield Rd at Orangethorpe Ave  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				North				North			
763	742	268	913	51	39	394	68	39	394	68	SL
646	849	184	604	452	51	EL	WR	51	EL	WR	64
Average				Average				Average			
In - Out				In - Out				In - Out			
2484				2484				2484			

Average In-out volumes

Link Inputs			
North			
763	742	268	913
646	849	184	604
Average			
In - Out			
2484			

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	394	68	39	501	742	0	583	101	58	
From S	124	0	41	10	175	184	130	0	43	11	
From E	64	82	0	736	882	913	66	85	0	761	
From W	51	63	452	0	566	646	58	72	516	0	
	To N	To S	To E	To W			CoTot	255	740	660	830
							Target	268	849	604	763
From N	0	669	92	53	814	742	0	609	84	48	
From S	137	0	39	10	186	184	130	0	39	10	
From E	70	97	0	701	868	913	73	102	0	737	
From W	61	82	472	0	616	646	64	87	495	0	
	To N	To S	To E	To W			CoTot	273	798	618	795
							Target	268	849	604	763

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	SR	EL	ER	WL	WT	WR		
Existing	10	124	41	68	394	39	51	452	63	82	736	64
2040	9	134	40	75	626	39	60	488	97	124	714	73
Existing + 10 pct	11	136	45	74	433	42	56	497	69	90	809	70
Max (2040, exist + 10pct)	11	136	45	75	626	42	60	497	97	124	809	73

Future Link outputs				Future volume				Turn Move Inputs			
North				North				North			
862	743	269	1006	60	42	626	75	60	42	626	75
654	847	192	617	497	51	EL	WR	51	EL	WR	73
Diff				Diff				Diff			
2595				2595				2595			



**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Van Buren St at Miraloma Ave Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
287	327	107		287	327	107		35	247	29	
285			260	285			260	SR	ST	SL	15
	351	106	233		351	106	233	EL	WR	WT	152
								ER	WL	WL	20
								NL	NT	NR	
In - Out	978	978	978					26	59	16	

**Average In-out volumes**

Link Inputs			
North			
287	327	107	
285			260
	351	106	233
In - Out	978	978	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	247	29	35	311	327		0	260	30	37
From S	59	0	16	26	101	106		62	0	17	27
From E	15	20	0	152	187	260		21	28	0	211
From W	28	67	173	0	268	285		30	71	184	0
	To N	To S	To E	To W			CoTot	113	359	231	275
							Target	107	351	233	287
From N	0	254	31	38	323	327		0	257	31	39
From S	59	0	17	29	104	106		60	0	17	29
From E	20	27	0	220	267	260		19	26	0	214
From W	28	70	185	0	283	285		29	70	186	0
	To N	To S	To E	To W			CoTot	108	354	235	282
							Target	107	351	233	287

Year	NL	NT	NR	SL	SR	EL	ER	WL	WT	WR
Existing	26	59	16	29	247	35	28	67	20	152
2040	30	59	16	30	255	40	29	185	70	216
Existing + 10 pct	28	64	17	31	271	38	30	190	73	167
Max (2040, exist + 10pct)	30	64	17	31	271	40	30	190	73	216

Future Link outputs				Future volume				Turn Move Inputs			
North											
286	342	112		286	342	112		40	271	31	
293			259	293			259	SR	ST	SL	18
	369	111	238		369	111	238	EL	WR	WT	216
								ER	WL	WL	25
In - Out	1005	1005	0					NL	NT	NR	
								30	64	17	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West  
 Intersection: Richfield Rd at Miraloma Ave  
 Scenario: 2040 Without Project  
 Time Period: Weekday AM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
270	757	207	164	25	124	40	14	50	345	56	30
254	702	238	226	124	40	14	14	SR	ST	SL	WR
Average				Average				Average			
In - Out				In - Out				In - Out			
1413 1405 1409				1413 1405 1409				1413 1405 1409			

Average In-out volumes

Link Inputs			
North			
271	755	207	164
253	704	237	227
In - Out			
1409 1409 0			

From	To N	To S	To E	To W	RowT	Target	2	To N	To S	To E	To W
From N	0	345	56	50	451	755	0	578	94	84	84
From S	144	0	21	14	179	237	191	0	28	19	19
From E	30	4	0	131	165	164	30	4	0	130	4
From W	25	40	124	0	189	253	33	54	166	0	0
	To N	To S	To E	To W			CoTot	254	635	288	232
							Target	207	704	227	271

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	14	144	21	56	345	50	25	124	40	4	131	30
2040	37	169	30	53	613	88	27	136	44	4	144	33
Existing + 10 pct	15	158	23	61	379	55	27	136	44	4	144	33
Max (2040, exist + 10pct)	37	169	30	61	613	88	27	143	86	4	144	33

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
269	762	229	181	27	143	86	37	88	613	61	33
256	703	236	234	143	86	37	37	SR	ST	SL	WR
In - Out				In - Out				In - Out			
1435 1435 0				1435 1435 0				1435 1435 0			

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Golden Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North				North				North							
71	1134	875	216	23	13	40	76	19	975	117	117	SR	ST	SL	WR
76	1132	909	256	13	40	76	76	EL	ET	WT	13	ER	WL	94	13
Average				Average				Average							
In - Out	2335	2335	2335					39	606	99	99	NL	NT	NR	NR

**Average In-out volumes**

Link Inputs			
North			
71	1134	875	216
76	1132	909	256
In - Out	2335	2335	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	
From N	0	975	117	19	1111	1134	From N	0	995	122	17	1134
From S	606	0	99	39	744	909	From S	746	0	121	41	909
From E	94	89	0	13	196	216	From E	106	98	0	13	216
From W	23	40	13	0	76	76	From W	23	40	13	0	76
ColTot							ColTot	875	1132	256	71	
Target							Target	875	1132	256	71	
From N	0	995	121	17	1133	1134	From N	0	995	122	17	1134
From S	748	0	122	41	911	909	From S	746	0	121	41	909
From E	104	98	0	13	215	216	From E	106	98	0	13	216
From W	23	40	13	0	76	76	From W	23	40	13	0	76
ColTot							ColTot	874	1133	256	71	
Target							Target	875	1132	256	71	
From N	0	995	122	17	1134	1134	From N	0	995	122	17	1134
From S	746	0	121	41	909	909	From S	746	0	121	41	909
From E	106	97	0	13	216	216	From E	106	97	0	13	216
From W	23	40	13	0	76	76	From W	23	40	13	0	76
ColTot							ColTot	875	1132	256	71	
Target							Target	875	1132	256	71	

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	39	606	99	117	975	19	23	13	40	89	13	94
2040	41	746	121	121	995	17	23	13	39	97	12	105
Existing + 10 pct	42	666	108	128	1072	20	25	14	44	97	14	103
Max (2040, exist + 10pct)	42	746	121	128	1072	20	25	14	44	97	14	105

Future Link outputs				Future volume				Turn Move Inputs							
North				North				North							
71	1220	876	216	25	14	44	97	20	1072	128	128	SR	ST	SL	WR
83	1213	909	263	44	25	14	97	EL	ET	WT	105	ER	WL	14	14
Diff				Diff				Diff							
In - Out	2428	2428	0					42	746	121	121	NL	NT	NR	NR

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Valencia Ave at Golden Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
168	447	457	172	39	355	39	41	SR	ST	SL	WR
183	465	453	166	64	ET	WT	79	EL	ER	WL	30
Average				60	ER	WL	30	NR	NT	NR	
In - Out				1256	1256	1256		47	269	38	

Average In-out volumes

Link Inputs			
North			
168	447	457	172
183	465	453	166
Average			
In - Out			
1256	1256	1256	0

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W
From N	0	355	39	39	433	447	From N	0	367	44	36
From S	269	0	38	47	354	453	From S	356	0	48	49
From E	41	30	0	79	150	172	From E	54	35	0	83
From W	39	60	64	0	163	183	From W	47	63	74	0
To N To S To E To W							ColTot	435	469	161	191
							Target	457	465	166	168
From N	0	367	44	36	447	447	From N	0	367	44	36
From S	356	0	48	49	453	453	From S	356	0	48	49
From E	54	35	0	83	172	172	From E	54	35	0	83
From W	47	63	74	0	183	183	From W	47	63	74	0
To N To S To E To W							ColTot	457	465	166	168
							Target	457	465	166	168
From N	0	367	44	36	447	447	From N	0	367	44	36
From S	356	0	48	49	453	453	From S	356	0	48	49
From E	54	35	0	83	172	172	From E	54	35	0	83
From W	47	63	74	0	183	183	From W	47	63	74	0
To N To S To E To W							ColTot	457	465	166	168
							Target	457	465	166	168

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	47	269	38	39	355	39	64	60	30	79	41
2040	49	355	48	44	366	36	48	73	62	34	82
Existing + 10 pct	51	295	41	42	390	42	42	70	66	33	86
Max (2040, exist + 10pct)	51	355	48	44	390	42	46	73	66	34	86

Future Link outputs				Future volume				Turn Move Inputs			
North											
179	476	455	174	46	42	390	44	SR	ST	SL	WR
183	490	454	165	66	ER	EL	74	EL	ER	WL	34
Diff				66	NR	NT	NR	NR	NT	NR	
In - Out				1289	1289	0		51	355	48	

**Traffic Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Rose Dr at Imperial Hwy Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
1820	1250	1455		2380	55	41	347	733	41	347	733
1843			2380	1431	231	SR	ST	SL	SR	ST	SL
	842	1060	2416	231	231	EL	ET	WT	EL	ET	WT
			Average			ER	ER	WL	ER	ER	WL
In - Out	6534	6534	6534			NL	NT	NR	NL	NT	NR
						230	419	100	230	419	100

**Average In-out volumes**

Link Inputs			
North			
1820	1250	1455	
1844			2380
	842	1060	2416
In - Out	6534	6534	0

From	To N	To S	To E	To W	RowTl	Target	2	To N	To S	To E	To W	
From N	0	347	733	41	1121	1250		0	387	817	46	
From S	419	0	100	230	749	1060		593	0	142	325	
From E	603	140	0	1190	1933	2380		742	172	0	1465	
From W	55	231	1431	0	1717	1844		59	248	1537	0	
	To N	To S	To E	To W				ColTot	1394	807	2496	1836
								Target	1455	842	2416	1820

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	230	419	100	733	347	41	55	1431	231	140	1190	603
<b>2040</b>	<b>322</b>	<b>615</b>	<b>121</b>	<b>788</b>	<b>410</b>	<b>50</b>	<b>69</b>	<b>1506</b>	<b>267</b>	<b>163</b>	<b>1447</b>	<b>769</b>
Existing + 10 pct	253	460	110	806	381	45	60	1574	254	154	1309	663
Max (2040, exist + 10pct)	322	615	121	806	410	50	69	1574	267	163	1447	769

Future Link outputs				Future volume				Turn Move Inputs			
North											
1819	1266	1453		2379	69	50	410	806	50	410	806
1910			2379	1574	267	SR	ST	SL	SR	ST	SL
	840	1058	2501	267	267	EL	ET	WT	EL	ET	WT
			Diff			ER	ER	WL	ER	ER	WL
In - Out	6613	6613	0			NL	NT	NR	NL	NT	NR
						322	615	121	322	615	121

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Placentia Ave at Bastanchury Rd Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
1257	655	543	1384	47	865	58	385	176	58	385	176
1168	860	917	1463	865	149	EL	ST	SL	WR	WT	122
Average				Average				Average			
In - Out	4124	4123	4124	198	342	NT	NR	NR	NT	NR	252

**Average In-out volumes**

Link Inputs			
North			
1257	655	543	1384
1168	860	917	1463
In - Out	4124	4124	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W
From N	0	385	176	58	619	655	From N	0	407	186	61
From S	342	0	259	198	799	917	From S	393	0	297	227
From E	122	252	0	842	1216	1384	From E	139	287	0	958
From W	47	149	865	0	1061	1168	From W	52	164	952	0
	To N	To S	To E	To W			ColTot	583	858	1436	1247
							Target	543	860	1463	1257
From N	0	406	189	60	655	655	From N	0	406	189	60
From S	369	0	315	233	917	917	From S	369	0	315	233
From E	128	292	0	964	1384	1384	From E	128	292	0	964
From W	46	162	960	0	1168	1168	From W	46	162	959	0
	To N	To S	To E	To W			ColTot	543	860	1463	1257
							Target	543	860	1463	1257
From N	0	406	189	60	655	655	From N	0	406	189	60
From S	369	0	315	233	917	917	From S	369	0	315	233
From E	128	292	0	964	1384	1384	From E	128	292	0	964
From W	46	162	960	0	1168	1168	From W	46	162	960	0
	To N	To S	To E	To W			ColTot	543	860	1463	1257
							Target	543	860	1463	1257

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	198	342	259	176	385	58	47	865	149	252	842	122
2040	233	369	314	189	405	60	46	959	162	292	963	127
Existing + 10 pct	217	376	284	193	423	63	51	951	163	277	926	134
Max (2040, exist + 10pct)	233	376	314	193	423	63	51	959	163	292	963	134

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
1259	679	561	1389	51	959	63	423	193	63	423	193
1173	878	923	1466	163	163	EL	ST	SL	WR	WT	134
Diff				Diff				Diff			
In - Out	4164	4164	0	233	376	NT	NR	NR	NT	NR	292

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Kraemer Blvd at Bastanchury Rd Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
1467	1041	1055		178	939	203	292	656	62	62	62
1485			1030	939			SR	ST	SL	SL	86
	1005	1144	1173	203			EL	ET	WT	WT	782
			Average				ER	ER	WL	WL	87
In - Out	4700	4700	4700	NL	NT	NR	NL	NT	NR	NL	NT
				225	625	82	225	625	82	225	625

**Average In-out volumes**

Link Inputs			
North			
1467	1041	1055	
1485			1030
	1005	1144	1174
In - Out	4700	4700	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	656	62	292	1010	1041	From N	0	676	64	301	1041	1041
From S	625	0	82	225	932	1144	From S	767	0	101	276	1144	1144
From E	86	87	0	782	955	1030	From E	93	94	0	844	1030	1030
From W	178	203	939	0	1320	1485	From W	200	228	1057	0	1485	1485
	To N	To S	To E	To W			ColTot	1060	998	1221	1421		
							Target	1055	1005	1174	1467		
From N	0	680	61	311	1052	1041	From N	0	673	61	307	1041	1041
From S	763	0	97	285	1145	1144	From S	762	0	97	285	1144	1144
From E	92	94	0	871	1058	1030	From E	90	92	0	848	1030	1030
From W	199	230	1015	0	1445	1485	From W	205	236	1044	0	1485	1485
	To N	To S	To E	To W			ColTot	1057	1001	1201	1440		
							Target	1055	1005	1174	1467		
From N	0	668	57	316	1041	1041	From N	0	668	57	316	1041	1041
From S	757	0	91	296	1144	1144	From S	757	0	91	296	1144	1144
From E	86	89	0	855	1030	1030	From E	86	89	0	855	1030	1030
From W	212	247	1026	0	1485	1485	From W	212	247	1026	0	1485	1485
	To N	To S	To E	To W			ColTot	1055	1005	1174	1466		
							Target	1055	1005	1174	1467		

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	225	625	82	62	656	292	178	939	203	87	782	86
2040	296	756	91	56	667	316	212	1025	247	89	854	86
Existing + 10 pct	247	687	90	68	721	321	195	1032	223	95	860	94
Max (2040, exist + 10pct)	296	756	91	68	721	321	212	1032	247	95	860	94

Future Link outputs				Future volume				Turn Move Inputs			
North											
1477	1110	1062		212	721	68	321	721	68	68	68
1491			1049	212			SR	ST	SL	SL	94
	1063	1144	1191	1032			EL	ET	WT	WT	860
			Diff	247			ER	ER	WL	WL	95
In - Out	4793	4793	0	NL	NT	NR	NL	NT	NR	NL	NT
				296	756	91	296	756	91	296	756

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Valencia Ave at Bastanchury Rd Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
981	461	489	941	90	102	298	41	SR	ST	SL	SL
1141	591	591	1072	759	170	759	35	ET	WT	WT	WT
			Average	106	265	265	97	ER	WL	NR	NR
In - Out	3133	3133	3133					NL	NT	NR	NR

**Average In-out volumes**

Link Inputs			
North			
981	461	489	941
1141	591	591	1072
In - Out	3133	3133	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	298	41	102	441	461	From N	0	311	43	107	461	461
From S	265	0	97	106	468	591	From S	334	0	122	134	591	591
From E	35	97	0	697	829	941	From E	40	110	0	791	941	941
From W	90	170	759	0	1019	1141	From W	101	190	850	0	1141	1141
	To N	To S	To E	To W			ColTot	475	612	1015	1031		
							Target	489	591	1072	981		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	WL	WT	WR	
Existing	106	265	97	41	298	102	90	759	170	97	697	35
<b>2040</b>	<b>110</b>	<b>343</b>	<b>136</b>	<b>52</b>	<b>311</b>	<b>96</b>	<b>98</b>	<b>883</b>	<b>161</b>	<b>118</b>	<b>773</b>	<b>48</b>
Existing + 10 pct	116	291	106	45	327	112	99	834	187	106	766	38
Max (2040, exist + 10pct)	116	343	136	52	327	112	99	883	187	118	773	48

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
1001	491	490	939	99	112	327	52	SR	ST	SL	SL
1109	632	595	1071	883	187	883	48	ET	WT	WT	WT
			Diff	116	343	136	118	ER	WL	NR	NR
In - Out	3194	3194	0					NL	NT	NR	NR



**Traffic Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: McCormac at Bastanchury Rd Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
944	33	41		963	6	10	17	6	10	17	
1021			1034	799	41	91	20	EL	SL	WL	20
	93	91		41	41	91	791	ET	WT	NT	791
			Average					ER	WL	NR	42
								NL	NT	NR	
In - Out	2110	2112	2111					35	15	41	

**Average In-out volumes**

Link Inputs			
North			
943	33	41	
1021			1034
	93	91	
In - Out	2111	2111	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	10	17	6	33	33	From N	0	9	18	6	33	33
From S	15	0	41	35	91	91	From S	14	0	42	35	91	91
From E	20	42	0	791	853	966	From E	21	41	0	902	964	966
From W	6	41	799	0	846	1021	From W	7	43	974	0	1023	1021
	To N	To S	To E	To W				To N	To S	To E	To W		
ColTot	45	107	1023	937			ColTot	41	93	1032	945		
Target	41	93	1034	943			Target	41	93	1034	943		

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	35	15	41	17	10	6	6	799	41	42	791
2040	34	13	42	18	8	6	6	973	41	42	902
Existing + 10 pct	38	16	45	18	11	6	6	878	45	46	870
Max (2040, exist + 10pct)	38	16	45	18	11	6	6	973	45	46	902

Future Link outputs				Future volume				Turn Move Inputs			
North											
946	35	44		970	6	11	18	6	11	18	
1024			1036	973	41	91	22	EL	SL	WL	22
	102	99		45	41	91	902	ET	WT	NT	902
			Diff					ER	WL	NR	46
								NL	NT	NR	
In - Out	2128	2128	0					38	16	45	

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Bradford Ave at Yorba Linda Blvd Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				North				North			
1471	224	294	1597	70	26	88	110	EL	SR	SL	110
1586	466	630	1806	1361	132	1497	125	EL	ET	WR	100
			Average					ER	WT	WL	1135
In - Out	4036	4037	4036					NL	NT	NR	194
								182	124	185	

**Average In-out volumes**

Link Inputs			
North			
1470	224	294	1597
1586	466	630	1806
In - Out	4036	4036	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	88	110	26	224	224	From N	0	88	110	26	224	224
From S	124	0	185	182	491	630	From S	159	0	237	233	159	0
From E	100	194	0	1135	1429	1597	From E	112	217	0	1268	71	134
From W	70	132	1361	0	1563	1586	From W	71	134	1381	0	342	439
	To N	To S	To E	To W				ColTot	342	439	1728	1528	294
								Target	294	466	1806	1470	294

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	182	124	185	110	88	26	70	1361	132	1497	145	213
2040	211	137	281	116	86	21	77	1407	125	254	1238	103
Existing + 10 pct	200	136	203	121	96	28	77	1497	145	213	1248	110
Max (2040, exist + 10pct)	211	137	281	121	96	28	77	1,497	145	254	1,248	110

Future Link outputs				Future volume				Turn Move Inputs			
North				North				North			
1487	245	324	1612	77	28	96	121	EL	SR	SL	110
1719	495	629	1899	145	1497	125	100	EL	ET	WR	1248
			Diff					ER	WT	WL	254
In - Out	4205	4205	0					NL	NT	NR	
								211	137	281	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West  
 Intersection: Kraemer Blvd at Yorba Linda Blvd  
 Scenario: 2040 Without Project  
 Time Period: Weekday PM

Future Link Inputs			Existing Counts			Turn Move Inputs		
North			Average			Turn Move Inputs		
1649	992	1201	1511	1735	214	571	166	
1789	966	1290	1511	1735	220	571	129	
					1217	ET	WT	1016
In - Out	5551	5551			172	ER	WL	156
					NL	NT	NR	
					251	639	187	

Average In-out volumes

Link Inputs		
North		
1649	992	1201
1789	966	1290
In - Out	5551	5551
		0

	From							Target	To						
	N	S	E	W	Row	Tot	N		S	E	W	Row	Tot		
1	0	639	129	220	922	1735	1735	0	600	175	217	1649	1735		
2	0	796	156	181	922	1735	1735	0	600	175	217	1649	1735		
3	0	790	161	184	922	1735	1735	0	598	176	215	1649	1735		
4	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
5	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
6	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
7	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
8	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
9	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
10	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
11	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
12	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
13	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
14	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
15	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
16	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
17	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
18	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
19	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
20	0	789	163	185	922	1735	1735	0	598	176	215	1649	1735		
	ColTot						1735		1735			1735			
	Target						1735		1735			1735			

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	251	639	187	166	571	214	220	1217	172	156	1016	129
2040	276	702	205	182	628	235	242	1338	189	171	1117	141
Existing + 10 pct	276	702	205	182	628	235	242	1338	189	171	1117	141
Max (2040, exist + 10pct)	276	702	205	182	628	235	242	1338	189	171	1117	141

Future Link outputs			Future volume			Turn Move Inputs		
North			Average			Turn Move Inputs		
1669	1045	1199	1508	1744	235	628	182	
1774	1003	1288	1508	1744	247	639	187	
					1338	ET	WT	1158
In - Out	5615	5615			189	ER	WL	186
					NL	NT	NR	
					276	788	224	

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West  
 Intersection: Palm Dr at Yorba Linda Blvd  
 Scenario: 2040 Without Project  
 Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
1524	0	1227	0	0	0	0	0	0	0	0	0
1706	438	1357	1176	1176	365	1176	365	42	1034	42	1034
Average											
In - Out	3318	3318	3318								

**Average In-out volumes**

Link Inputs			
North			
1524	0	1227	0
1706	438	1357	1176
In - Out	3318	3318	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target			
From N	0	0	0	0	0	0	From S	0	0	46	280	326	385			
From S	0	0	46	280	326	385	From E	0	42	0	1034	1076	1227			
From E	0	42	0	1034	1076	1227	From W	0	365	1176	0	1541	1706			
From W	0	365	1176	0	1541	1706	ColTot	0	452	1356	1510	1510	1524			
Target							0							438	1357	1524

Year	NL	NT	NR	SL	SR	EL	ER	WL	WT	WR
Existing	280	0	46	0	0	0	1176	365	42	1034
2040	336	0	48	0	0	0	1309	396	41	1185
Existing + 10 pct	308	0	50	0	0	0	1293	401	46	1137
Max (2040, exist + 10pct)	336	0	50	0	0	0	1309	401	46	1185

Future Link outputs				Future volume				Turn Move Inputs			
North											
1521	0	1231	0	0	0	0	0	0	0	0	0
1710	447	1359	1309	401	1309	396	41	1185	46	1185	46
Diff											
In - Out	3327	3327	0								

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Valencia Ave at Yorba Linda Blvd Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				East				South			
1174	673	601	1026	1174	946	1140	1174	218	293	126	111
1280	364	300	1140	946	40	1140	179	SL	WR	780	35
Average				Average				Average			
In - Out	3279	3279	3279	3279	3279	3279	3279	37	196	43	111

**Average In-out volumes**

Link Inputs			
North			
1174	673	601	1026
1280	364	300	1140
In - Out	3279	3279	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	293	126	218	637	673	From S	196	0	43	37	276	300
From S	11	35	0	780	926	1026	From E	179	40	946	0	1165	1280
From E	179	40	946	0	1165	1280	From W	248	43	983	0	1275	1280
From W	248	43	983	0	1275	1280	ColTot	533	392	1219	1135	1174	1174
Target							Target						
601 364 1140 1174							601 364 1140 1174						

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	37	196	43	126	218	218	179	946	40	35	780
2040	40	222	36	118	266	266	250	985	43	31	866
Existing + 10 pct	40	215	47	138	322	239	196	1040	44	38	858
Max (2040, exist + 10pct)	40	222	47	138	322	266	250	1040	44	38	866

Future Link outputs				Future volume				Turn Move Inputs			
North				East				South			
1172	726	599	1031	1172	1040	1225	1172	266	322	138	127
1334	404	309	1225	1040	44	1225	250	SL	WR	866	38
Diff				Diff				Diff			
In - Out	3400	3400	0	3400	3400	3400	3400	40	222	47	127

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West  
 Intersection: Rose Dr at Yorba Linda Blvd  
 Scenario: 2040 Without Project  
 Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
992	828	1237		992	828	1237		92	533	150	
1025			1073	1025			1073	SR	ST	SL	WR
	856	1310	1152		856	1310	1152	ET	WT	650	159
			Average				Average	ER	WL	204	
In - Out	4237	4236	4236	In - Out	4237	4236	4236	NL	NT	NR	
								141	765	189	

**Average In-out volumes**

Link Inputs			
North			
992	828	1237	
1025			1073
	856	1310	1152
In - Out	4236	4236	0

From	To N	To S	To E	To W	RowT	Target	From	To N	To S	To E	To W	RowT	Target
From N	0	533	150	92	775	828	From N	0	569	160	98	727	828
From S	765	0	189	141	1095	1310	From S	915	0	226	169	1310	1310
From E	159	204	0	650	1013	1073	From E	168	216	0	689	1073	1073
From W	110	68	826	0	1004	1025	From W	112	69	844	0	1025	1025
	To N	To S	To E	To W			ColTot	1196	855	1230	956		
							Target	1237	856	1152	992		
From N	0	570	150	102	822	828	From N	0	574	151	103	828	828
From S	947	0	212	175	1334	1310	From S	930	0	208	172	1310	1310
From E	174	216	0	715	1105	1073	From E	169	210	0	694	1073	1073
From W	116	70	790	0	976	1025	From W	122	73	830	0	1025	1025
	To N	To S	To E	To W			ColTot	1221	857	1189	969		
							Target	1237	856	1152	992		

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	141	765	189	150	533	92	110	826	68	204	650	159
2040	178	938	192	142	576	108	131	817	76	202	704	166
Existing + 10 pct	155	841	207	165	586	101	121	908	74	224	715	174
Max (2040, exist + 10pct)	178	938	207	165	586	108	131	908	76	224	715	174

Future Link outputs				Future volume				Turn Move Inputs			
North											
1001	859	1243		1001	859	1243		108	586	165	
1115			1113	1115			1113	SR	ST	SL	WR
	886	1328	1280		886	1328	1280	EL	WT	715	174
			Diff				Diff	ER	WL	224	
In - Out	4410	4410	0	In - Out	4410	4410	0	NL	NT	NR	
								178	938	207	

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Morse Ave at Kraemer Blvd Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				North				SR			
42	992	1347	190	15	15	15	15	24	832	69	71
36	999	1448	222	15	15	15	15	ST	SL	WT	11
Average				Average				ER			
In - Out	2666	2610	2638	In - Out	2666	2610	2638	NL	NT	NR	108
								7 1048 138			

**Average In-out volumes**

Link Inputs			
North			
42	981	1361	188
36	1010	1433	224
In - Out	2638	2638	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	832	69	24	925	981	From N	0	883	73	25	981	1,000
From S	1048	0	138	7	1193	1433	From S	1275	0	166	8	1433	1,000
From E	71	108	0	11	190	188	From E	70	107	0	11	188	1,000
From W	15	6	15	0	36	36	From W	15	6	15	0	36	1,000
To N To S To E To W							ColTot	1344	995	254	45		
							Target	1361	1010	224	42		
From N	0	895	65	24	984	981	From N	0	893	65	24	981	1,000
From S	1275	0	147	8	1430	1433	From S	1278	0	147	8	1433	1,000
From E	71	108	0	10	190	188	From E	70	107	0	10	188	1,000
From W	15	6	13	0	34	36	From W	16	6	14	0	36	1,000
To N To S To E To W							ColTot	1364	1006	225	42		
							Target	1361	1010	224	42		
From N	0	894	63	24	981	981	From N	0	884	63	24	981	1,000
From S	1277	0	148	8	1433	1433	From S	1277	0	148	8	1433	1,000
From E	69	109	0	10	188	188	From E	69	109	0	10	188	1,000
From W	16	6	14	0	36	36	From W	16	6	14	0	36	1,000
To N To S To E To W							ColTot	1362	1009	224	42		
							Target	1361	1010	224	42		

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	7	1048	138	69	832	24	15	15	6	108	11
2040	8	1277	147	62	894	23	13	6	108	10	69
Existing + 10 pct	7	1152	151	75	915	26	16	16	6	118	12
Max (2040, exist + 10pct)	8	1277	151	75	915	26	16	16	6	118	12

Future Link outputs				Future volume				Turn Move Inputs			
North				North				SR			
46	1016	1371	208	16	16	16	16	26	915	75	78
38	1039	1436	242	16	16	16	16	ST	SL	WT	12
Diff				Diff				ER			
In - Out	2698	2698	0	In - Out	2698	2698	0	NL	NT	NR	118
								8 1277 151			

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Valencia Ave at Palm Dr Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				Average							
332	299	257	440	332	299	257	440	51	34	217	133
496	74	58	630	496	74	58	630	SR	ST	SL	WR
In - Out 1293 1293 1293				Average				ET 134 23 0 280 436 440			
								ER 17 379 0 462 496			
								NL 5 36 17			
								NT 34 215 51			
								NR 17 5 5			

**Average In-out volumes**

Link Inputs			
North			
332	299	257	440
496	74	58	630
In - Out 1293 1293 0			

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	34	214	52	299	299	From N	0	34	214	52	299	299
From S	37	0	16	5	58	58	From S	37	0	16	5	58	58
From E	142	22	0	276	440	440	From E	142	22	0	276	440	440
From W	77	18	400	0	495	496	From W	77	18	400	0	495	496
	To N	To S	To E	To W				To N	To S	To E	To W		
							ColTot	257	74	630	332		
							Target	257	74	630	332		
From N	0	34	214	52	299	299	From N	0	34	214	52	299	299
From S	37	0	16	5	58	58	From S	37	0	16	5	58	58
From E	142	22	0	276	440	440	From E	142	22	0	276	440	440
From W	77	18	400	0	495	496	From W	77	18	400	0	495	496
	To N	To S	To E	To W				To N	To S	To E	To W		
							ColTot	257	74	630	332		
							Target	257	74	630	332		
From N	0	34	214	52	299	299	From N	0	34	214	52	299	299
From S	37	0	16	5	58	58	From S	37	0	16	5	58	58
From E	142	22	0	276	440	440	From E	142	22	0	276	440	440
From W	77	18	400	0	496	496	From W	77	18	400	0	496	496
	To N	To S	To E	To W				To N	To S	To E	To W		
							ColTot	257	74	630	332		
							Target	257	74	630	332		
							Pct	1.000	1.000	1.000	1.000		

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ET	WL	WT	WR
Existing	5	36	17	217	34	51	66	379	17	23	133
2040	4	37	15	213	33	51	67	400	18	22	141
Existing + 10 pct	5	39	18	238	37	56	72	416	18	25	146
Max (2040, exist + 10pct)	5	39	18	238	37	56	77	416	18	25	146

**Future Link outputs**

North			
331	262	479	672
80	62	Diff	
In - Out 1383 1383 0			

**Future volume**

77	416	18	5
In - Out 5 39 18			

**Turn Move Inputs**

56	37	238	146
SR	ST	SL	WR
416	ET	WT	308
ER	WL	NR	25
5	39	18	



**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Palm Dr at Rose Dr Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
498	954	1296	18	56	75	842	8	SR	ST	SL	8
582	1394	1657	22	4	ET	WR	8	EL	ET	WT	5
		Average		512	ER	WL	5	ER	NR	NR	10
In - Out	3211	3211	3211		NL	NT	NR	411	1061	10	

**Average In-out volumes**

Link Inputs			
North			
498	954	1296	18
582	1394	1657	22
In - Out	3211	3211	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	842	8	75	925	954	0	869	8	77	
From S	1061	0	10	411	1482	1657	1186	0	11	459	
From E	8	5	0	5	18	18	8	5	0	5	
From W	56	512	4	0	572	582	57	521	4	0	
	To N	To S	To E	To W			ColTot	1251	1395	24	542
							Target	1296	1394	22	498

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	411	1061	10	8	842	75	56	4	512	5	8
2040	419	1226	10	7	872	74	61	3	516	4	8
Existing + 10 pct	452	1167	11	8	926	82	61	4	563	5	8
Max (2040, exist + 10pct)	452	1226	11	8	926	82	61	4	563	5	8

Future Link outputs				Future volume				Turn Move Inputs			
North											
539	1016	1295	18	61	82	926	8	SR	ST	SL	8
628	1494	1689	22	4	ET	WR	8	EL	ET	WT	5
		Diff		563	ER	WL	5	ER	NR	NR	10
In - Out	3351	3351	0		NL	NT	NR	452	1226	11	

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Madison Ave at Bradford Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				East				South			
410	527	558	381	95	141	82	58	73	326	84	3
408	543	635	400	141	82	58	342	SR	ST	SL	93
			Average					EL	WT	WL	152
In - Out	1910	1910	1910					ER	WL	NR	103
								NL	NT	NR	103
								58	342	147	

**Average In-out volumes**

Link Inputs			
North			
410	527	558	381
408	543	635	400
In - Out	1910	1910	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target						
From N	0	326	84	73	483	527	From N	0	356	92	80	527	2	From N	0	356	92	80	527
From S	342	0	147	58	547	635	From S	397	0	171	67	635	From S	397	0	171	67	635	
From E	93	103	0	152	348	381	From E	102	113	0	167	381	From E	102	113	0	167	381	
From W	95	82	141	0	318	366	From W	109	94	162	0	366	From W	109	94	162	0	366	
	To N	To S	To E	To W			ColTot	609	563	425	314		ColTot	609	563	425	314		
							Target	558	543	400	410		Target	558	543	400	410		

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	58	342	147	84	326	73	95	141	82	103	93
2040	99	373	162	78	341	106	105	158	102	98	78
Existing + 10 pct	63	376	161	92	358	80	104	155	90	113	102
Max (2040, exist + 10pct)	99	376	162	92	358	106	105	158	102	113	102

Future Link outputs				Future volume				Turn Move Inputs			
North				East				South			
408	556	583	418	105	158	102	99	106	358	92	3
408	573	637	412	102	158	102	99	SR	ST	SL	102
			Diff					EL	WT	WL	203
In - Out	1976	1976	0					ER	WL	NR	113
								NL	NT	NR	113
								99	376	162	

Traffic Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Madison Ave at Kraemer Blvd Time Period: Weekday PM

Future Link Inputs		Existing Counts		Turn Move Inputs	
North		East		South	
371	978	1470	34	109	784
395	1065	1566	66	142	32
Average		Average		EL	SL
In - Out	2973	2973	2973	ET	WT
				ER	WL
				NL	NT
				213	1058

Average In-out volumes

Link Inputs	
North	
371	978
395	1065
Average	
In - Out	2973

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	840	32	107	978	978	From N	0	839	32	107	978	978
From S	1309	0	7	249	1565	1566	From S	1309	0	7	249	1566	1566
From E	15	4	0	14	34	34	From E	15	4	0	14	34	34
From W	146	221	27	0	395	395	From W	146	221	27	0	395	395
				To N	To S	To E	To W					ColTot	1471
				To N	To S	To E	To W					Target	1470
				To N	To S	To E	To W					Pct	1.000

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	213	1058	6	32	784	109	142	28	208	4	15	15
2040	249	1309	7	31	839	106	145	27	221	4	14	15
Existing + 10 pct	234	1163	6	35	862	119	156	30	228	4	16	16
Max (2040, exist + 10pct)	249	1309	7	35	862	119	156	30	228	4	16	16

Future Link outputs		Future volume		Turn Move Inputs	
North		East		South	
384	1016	1481	36	119	862
414	1094	1560	72	156	35
Average		Average		EL	SL
In - Out	3031	3031	0	ET	WT
				ER	WL
				NL	NT
				249	1309

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
Intersection: Buena Vista Av at Rose Dr Time Period: Weekday PM

Future Link Inputs and Existing Counts summary table

Average In-out volumes summary table

Main data table showing traffic flow from various directions (N, S, E, W) to others (N, S, E, W) with Target and ColTot values. Includes color-coded cells for values exceeding 1,000.

Summary table for Turn Movements and Traffic Volumes with columns for Year, NL, NT, NR, SL, SR, EL, ER, WL, WT, WR.

Future Link outputs and Future volume summary tables

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Nutwood Ave at Placencia Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
546	842	1310	89	553	240	473	12	546	473	12	11
911	745	827	68	38	ET	WT	48	EL	WR	WT	48
Average				Average				Average			
In - Out 2670 2669 2670				In - Out 2670 2669 2670				In - Out 2670 2669 2670			

**Average In-out volumes**

Link Inputs			
North			
546	842	1310	89
911	745	827	68
Average			
In - Out 2670 2670 0			

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W	RowTl	Target
From N	0	473	12	240	725	842	From S	650	0	18	94	762	827
From S	0	469	13	361	843	842	From E	11	30	0	48	89	89
From E	10	23	0	56	89	89	From W	553	264	38	0	855	911
From W	619	254	38	0	911	911	ColTot	1306	861	74	429		
	To N	To S	To E	To W			Target	1310	746	68	546		
From N	0	469	13	361	842	842	From S	681	0	17	129	827	827
From E	10	23	0	56	89	89	From W	619	254	38	0	911	911
From W	619	254	38	0	911	911	ColTot	1310	746	68	546		
	To N	To S	To E	To W			Target	1310	746	68	546		
From N	0	468	12	361	842	842	From S	681	0	17	129	827	827
From E	10	23	0	56	89	89	From W	619	254	38	0	911	911
From W	619	254	38	0	911	911	ColTot	1310	746	68	546		
	To N	To S	To E	To W			Target	1310	746	68	546		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	94	650	18	12	473	240	553	38	264	30	48	11
2040	128	681	17	12	468	361	618	38	253	23	56	9
Existing + 10 pct	103	715	19	13	520	264	608	41	290	33	52	12
Max (2040, exist + 10pct)	128	715	19	13	520	361	618	41	290	33	56	12

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
545	894	1345	101	618	520	13	361	546	473	12	11
911	745	827	68	41	ET	WT	56	EL	WR	WT	56
Average				Average				Average			
In - Out 2806 2806 0				In - Out 2806 2806 0				In - Out 2806 2806 0			

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Kraemer Blvd at Alta Vista St Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
188	1051	1571	846	547	549	63	57	92	616	274	274
132	846	1347	835	549	554	64	12	SR	ST	SL	SL
Average				Average				Average			
In - Out 3078 3154 3116				In - Out 3116 3116 0				In - Out 14 930 200			

**Average In-out volumes**

Link Inputs			
North			
186	1064	1552	835
134	835	1361	835
In - Out 3116 3116 0			

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target					
From N	0	616	274	92	982	1064	From N	0	668	297	100	1064	From N	0	677	291	97	1064
From S	930	0	200	14	1144	1364	From S	1109	0	238	17	1364	From S	1150	0	200	14	1364
From E	289	154	0	82	525	554	From E	305	163	0	87	554	From E	331	148	0	75	554
From W	63	12	57	0	132	134	From W	64	12	58	0	134	From W	71	11	52	0	134
ColTot 1478 842 593 203							ColTot 1548 839 543 186											
Target 1552 835 543 186							Target 1552 835 543 186											
Pct 1.000 1.000 1.000 1.000																		

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	14	930	200	274	616	92	63	57	12	154	82	289
2040	13	1149	199	291	676	96	70	51	11	147	75	331
Existing + 10 pct	15	1023	220	301	677	101	69	62	13	169	90	317
Max (2040, exist + 10pct)	15	1,149	220	301	677	101	70	62	13	169	90	331

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
206	1079	1550	859	590	583	70	62	101	677	301	301
147	859	1381	835	583	554	62	13	SR	ST	SL	SL
Diff				Diff				Diff			
In - Out 3198 3198 0				In - Out 3198 3198 0				In - Out 15 1149 220			

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Rose Dr at Alta Vista St Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				North				North			
724	1207	1683		724	1207	1683		220	831	117	
599			499	599			499	SR	ST	SL	
	1060	1548	386		1060	1548	386	EL	EL	WR	103
			Average				Average	ET	ET	WT	251
								ER	ER	WL	93
In - Out	3853	3853	3853	In - Out	3853	3853	3853	NL	NT	NR	
								189	1152	49	

**Average In-out volumes**

Link Inputs			
North			
724	1207	1683	
599			499
	1060	1548	386
In - Out	3853	3853	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	831	117	220	1168	1207	From N	0	859	116	232	1207	1207
From S	1152	0	49	189	1390	1548	From S	1286	0	51	211	1548	1548
From E	103	93	0	251	447	499	From E	115	102	0	281	499	499
From W	274	97	226	0	597	599	From W	282	98	219	0	599	599
	To N	To S	To E	To W				To N	To S	To E	To W		
							ColTot	1683	1060	386	724		
							Target	1683	1060	386	724		

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	189	1152	49	117	831	220	274	226	97	93	251	103
2040	211	1285	51	115	859	231	282	218	98	102	281	115
Existing + 10 pct	207	1267	53	128	914	242	301	248	106	102	276	113
Max (2040, exist + 10pct)	211	1,285	53	128	914	242	301	248	106	102	281	115

Future Link outputs				Future volume				Turn Move Inputs			
North				North				North			
734	1284	1701		734	1284	1701		242	914	128	
635			498	635			498	SR	ST	SL	
	1122	1549	429		1122	1549	429	EL	EL	WR	115
			Diff				Diff	ET	ET	WT	281
								ER	ER	WL	102
In - Out	3986	3986	0	In - Out	3986	3986	0	NL	NT	NR	
								211	1285	53	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Jefferson St at Alta Vista St Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs					
North				North				SR					
406	60	142	236	60	142	236	60	17	4	39	17	4	39
435	109	335	409	305	409	441	60	17	4	39	17	4	39
Average				Average				EL					
In - Out	1066	1066	1066	In - Out	1066	1066	1066	67	22	0	59	22	0
								ET					
								ER					
								NL					
								NT					
								NR					
								122					
								61					
								100					

Average In-out volumes

Link Inputs			
North			
406	60	142	236
435	109	335	409
In - Out	1066	1066	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	17	4	39	60	60	From N	0	17	4	39	60	60
From S	61	0	100	122	283	335	From S	61	0	100	122	283	335
From E	21	22	0	193	236	236	From E	21	22	0	193	236	236
From W	60	76	305	0	441	435	From W	60	76	305	0	441	435
To N To S To E To W							ColTot	152	114	423	376	1066	
To N To S To E To W							Target	142	109	409	406	1066	

Year	NL	NT	NR	SL	SR	EL	ET	ER	WL	WT	WR
Existing	122	61	100	4	17	39	60	305	76	22	193
2040	163	65	105	3	14	41	59	299	76	18	200
Existing + 10 pct	134	67	110	4	18	42	66	335	83	24	212
Max (2040, exist + 10pct)	163	67	110	4	18	42	66	335	83	24	212

Future Link outputs				Future volume				Turn Move Inputs					
North				North				SR					
417	64	156	259	64	156	259	64	18	4	42	18	4	42
484	125	340	449	335	449	484	64	18	4	42	18	4	42
Diff				Diff				EL					
								ET					
								ER					
								NL					
								NT					
								NR					
								163					
								67					
								110					
In - Out	1147	1147	0	In - Out	1147	1147	1147	67	24	0	200	24	0



**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Placencia Ave at Chapman Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
1375	724	852	1277	1375	724	852	1277	176	361	209	255
1386	723	911	1349	1386	723	911	1349	SR	ST	SL	WR
Average				Average				Average			
In - Out 4300 4300 4300				In - Out 4300 4300 4300				In - Out 256 396 116			

**Average In-out volumes**

Link Inputs			
North			
1375	724	852	1277
1386	723	911	1349
In - Out 4300 4300 0			

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	361	209	176	746	724	From N	0	351	203	171	724	
From S	396	0	116	256	768	911	From S	470	0	138	304	911	
From E	136	103	0	769	1008	1277	From E	172	131	0	975	1277	
From W	255	192	860	0	1307	1386	From W	270	204	912	0	1386	
To N To S To E To W							To N To S To E To W						
ColTot 913 685 1253 1449							ColTot 913 685 1253 1449						
Target 852 723 1349 1375							Target 852 723 1349 1375						

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	256	396	116	209	361	176	255	860	192	103	769
2040	286	455	169	220	362	141	223	929	203	157	947
Existing + 10 pct	281	435	127	229	397	193	280	946	211	113	845
Max (2040, exist + 10pct)	286	455	169	229	397	193	280	959	211	157	947

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
1426	819	907	1276	1426	819	907	1276	193	397	229	280
1490	765	910	1357	1490	765	910	1357	SR	ST	SL	WR
In - Out 4455 4455 0				In - Out 4455 4455 0				In - Out 286 455 169			

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Bradford Ave at Chapman Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
1185	526	666	1067	225	748	53	1026	258	138	96	156
1217	244	275	990	748	53	1026	1217	SR	ST	SL	WR
Average				Average				Average			
In - Out	3085	3085	3085	In - Out	3085	3085	3085	EL	ET	ER	WL
								NL NT NR			
								38 170 67			

**Average In-out volumes**

Link Inputs			
North			
1185	526	666	1067
1217	244	275	990
In - Out	3085	3085	0

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W	RowTl	Target
From N	0	138	96	258	492	526	From N	0	148	103	276	526	
From S	170	0	67	38	275	275	From S	170	0	67	38	275	
From E	156	53	0	656	865	1067	From E	193	65	0	810	1067	
From W	225	53	748	0	1026	1217	From W	267	63	887	0	1217	
To N To S To E To W							To N To S To E To W						
ColTot							ColTot						
Target							Target						
666 244 990 1185							666 244 990 1185						

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	38	170	67	96	138	258	225	748	53	53	656	156
<b>2040</b>	<b>42</b>	<b>175</b>	<b>56</b>	<b>87</b>	<b>129</b>	<b>309</b>	<b>308</b>	<b>845</b>	<b>61</b>	<b>52</b>	<b>832</b>	<b>182</b>
Existing + 10 pct	41	187	73	105	151	283	247	822	58	58	721	171
Max (2040, exist + 10pct)	42	187	73	105	151	309	308	845	61	58	832	182

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
1183	565	677	1072	308	845	61	1072	309	151	105	182
1214	270	302	1023	845	61	1072	1217	SR	ST	SL	WR
Diff				Diff				Diff			
In - Out	3153	3153	0	In - Out	3153	3153	0	EL	ET	ER	WL
								NL NT NR			
								42 187 73			

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Kracmer Blvd at Chapman Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
1074	794	1309	672	166	488	76	181	SR	ST	SL	WR
832	756	1511	669	416	159	132	57	ET	ER	WT	WL
Average				Average				Average			
In - Out	3809	3809	3809	In - Out	3809	3809	3809	NL	NT	NR	NR
								275	868	132	132

**Average In-out volumes**

Link Inputs			
North			
1074	794	1309	672
832	756	1511	669
In - Out	3809	3809	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	488	76	166	730	794	From N	0	531	83	180	794	794
From S	868	0	132	275	1275	1511	From S	1029	0	156	326	1511	1511
From E	57	63	0	356	475	672	From E	81	88	0	504	672	672
From W	181	159	416	0	756	832	From W	199	175	458	0	832	832
	To N	To S	To E	To W				ColTot	1309	793	697	1010	1010
								Target	1309	756	669	1074	1074
From N	0	509	79	205	794	794	From N	0	510	80	204	794	794
From S	1022	0	143	350	1515	1511	From S	1019	0	143	349	1511	1511
From E	77	77	0	521	675	672	From E	77	77	0	518	672	672
From W	210	171	447	0	827	832	From W	212	172	449	0	832	832
	To N	To S	To E	To W				ColTot	1307	759	672	1071	1071
								Target	1309	756	669	1074	1074
From N	0	509	79	205	794	794	From N	0	509	79	205	794	794
From S	1019	0	142	350	1511	1511	From S	1019	0	142	350	1511	1511
From E	77	76	0	519	672	672	From E	77	76	0	519	672	672
From W	213	171	448	0	832	832	From W	213	171	448	0	832	832
	To N	To S	To E	To W				ColTot	1309	757	669	1074	1074
								Target	1309	756	669	1074	1074

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	275	868	132	76	488	166	181	416	159	62	356
2040	349	1019	141	79	509	205	212	448	171	76	519
Existing + 10 pct	302	954	145	83	536	182	199	457	174	68	391
Max (2040, exist + 10pct)	349	1,019	145	83	536	205	212	457	174	76	519

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
1073	824	1307	671	212	536	83	212	SR	ST	SL	WR
847	786	1511	685	457	174	68	519	ET	ER	WT	WL
Diff				Diff				Diff			
In - Out	3851	3851	0	In - Out	349	1019	145	NL	NT	NR	NR
								349	1019	145	145

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Placentia Ave at Crowther Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
238	695	963	548	124	94	442	95	94	442	95	184
259	845	892	348	73	62	526	132	124	94	442	95
Average				Average				Average			
In - Out	2394	2394	2394	In - Out	2394	2394	2394	In - Out	2394	2394	2394

**Average In-out volumes**

Link Inputs			
North			
238	695	963	548
259	845	892	348
In - Out	2394	2394	0

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W	RowTl	Target
From N	0	442	95	94	631	695	From N	0	487	105	103	695	
From S	526	0	94	60	680	892	From S	690	0	123	79	892	
From E	184	132	0	84	400	548	From E	252	181	0	115	548	
From W	124	62	73	0	259	259	From W	124	62	73	0	259	
	To N	To S	To E	To W				To N	To S	To E	To W		
					ColTot	1066						1066	
					Target	963						963	

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	60	526	94	95	442	94	124	73	62	132	84	184
2040	73	652	165	100	525	69	98	82	78	241	95	211
Existing + 10 pct	66	578	103	104	486	103	136	80	68	145	92	202
Max (2040, exist + 10pct)	73	652	165	104	525	103	136	82	78	241	95	211

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
271	732	999	547	136	103	525	104	103	525	104	211
296	844	890	351	78	62	526	132	124	94	442	95
Diff				Diff				Diff			
In - Out	2465	2465	0	In - Out	2465	2465	0	In - Out	2465	2465	2465

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Melrose St at Crowther Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs						
North														
513	276	440	357	30	170	69	127	SR	184	9	33	ST	SL	52
452	443	644	333	170	69	127		EL	170	69	127	WR	WT	190
Average														
In - Out	1729	1729	1729											

**Average In-out volumes**

Link Inputs			
North			
513	276	440	357
452	443	644	333
In - Out	1729	1729	0

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W
From N	0	184	9	33	226	276	From N	0	225	11	40
From S	336	0	30	127	493	644	From S	439	0	39	166
From E	52	41	0	190	283	357	From E	66	52	0	239
From W	30	69	170	0	269	452	From W	50	116	286	0
	To N	To S	To E	To W			ColTot	555	392	336	446
							Target	440	443	333	513
From N	0	233	9	35	277	276	From N	0	232	9	35
From S	366	0	49	228	643	644	From S	367	0	49	228
From E	42	64	0	250	356	357	From E	42	64	0	251
From W	32	146	275	0	453	452	From W	32	145	275	0
	To N	To S	To E	To W			ColTot	441	441	332	515
							Target	440	443	333	513
From N	0	233	9	35	276	276	From N	0	233	9	35
From S	366	0	50	228	644	644	From S	366	0	50	228
From E	42	65	0	250	357	357	From E	42	65	0	250
From W	32	146	275	0	452	452	From W	32	145	275	0
	To N	To S	To E	To W			ColTot	440	443	333	514
							Target	440	443	333	513

Year	NI	NT	NR	SI	SL	SR	EL	ET	ER	WL	WT	WR
Existing	127	336	30	9	184	33	30	170	69	41	190	52
<b>2040</b>	<b>228</b>	<b>366</b>	<b>49</b>	<b>9</b>	<b>232</b>	<b>36</b>	<b>33</b>	<b>274</b>	<b>145</b>	<b>64</b>	<b>250</b>	<b>41</b>
Existing + 10 pct	139	369	33	9	202	36	33	187	75	45	209	57
Max (2040, exist + 10pct)	228	369	49	9	232	36	33	274	145	64	250	57

Future Link outputs				Future volume				Turn Move Inputs						
North														
514	277	459	371	33	145	145	228	SR	232	9	36	ST	SL	57
452	441	646	332	145	228	145	228	EL	274	65	250	WR	WT	250
Diff														
In - Out	1746	1746	0											

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Kraemer Blvd at Crowther Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs							
North				South				East				West			
308	747	1518	371	72	96	101	101	59	599	42	72	59	599	42	72
230	624	1287	185	96	39	0	0	SR	ST	SL	SL	SR	ST	SL	SL
Average				Average				Average							
In - Out	2635	2635	2635												

**Average In-out volumes**

Link Inputs			
North			
308	747	1518	371
230	624	1287	185
Average			
In - Out	2635	2635	0

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W	RowTl	Target
From N	0	599	42	59	700	747	From N	0	640	45	63	747	
From S	1109	0	1	71	1181	1287	From S	1209	0	1	77	1287	
From E	101	0	0	100	201	371	From E	186	0	0	185	371	
From W	72	39	96	0	207	230	From W	80	43	107	0	230	
To N To S To E To W							ColTot	1475	683	153	325	2300	
To N To S To E To W							Target	1518	624	185	308	2300	
<b>Pct 0.999 1.001 1.001 1.000</b>													

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	71	1109	1	42	599	59	72	96	39	0	101
2040	63	1223	1	69	597	80	87	114	27	0	164
Existing + 10 pct	78	1219	1	46	658	64	79	105	42	0	110
Max (2040, exist + 10pct)	78	1223	1	69	658	80	87	114	42	0	164

Future Link outputs			
North			
322	807	1516	370
247	700	1306	184
Diff			
In - Out	2722	2722	0

Future volume			
80	658	69	81
SR	ST	SL	SL
87	114	27	164
ER	WL	WT	WR
78	1223	1	164

Turn Move Inputs			
80	658	69	81
SR	ST	SL	SL
87	114	27	164
ER	WL	WT	WR
78	1223	1	164

**Traffic Movement Forecast: Row-Column-Sum Method**

Street Alignment: **North/South** at **East/West** Scenario: **2040 Without Project**  
 Intersection: **Placencia Ave** at **Orangehope Ave** Time Period: **Weekday PM**

Future Link Inputs		Existing Counts		Turn Move Inputs	
North		North		SR	ST
1358	1051 803	1358	1151	251	325 217
1042	707 567	653	54	185	EL SL 170
	Average	54		ET	WT 752
In - Out	4020 4020	46		ER	WL 140
				NL	NT NR
				46	309 89

**Average In-out volumes**

Link Inputs	
North	
1358	1358
1042	1151
707	567
In - Out	4020 4020 0

1	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	325	217	251	793	1051	0	431	288	333	
From S	309	0	89	46	444	567	395	0	114	59	
From E	170	140	0	752	1062	1359	218	179	0	962	
From W	185	54	653	0	892	1042	216	63	763	0	
	To N	To S	To E	To W			ColTot	828	673	1164	1354
							Target	803	707	1151	1358

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	46	309	89	217	325	251	185	653	54	140	752	170
<b>2040</b>	<b>62</b>	<b>389</b>	<b>115</b>	<b>273</b>	<b>448</b>	<b>329</b>	<b>203</b>	<b>762</b>	<b>69</b>	<b>189</b>	<b>966</b>	<b>203</b>
Existing + 10 pct	50	339	97	238	357	276	203	718	59	154	827	187
Max (2040, exist + 10pct)	62	389	115	273	448	329	209	762	69	189	966	203

Future Link outputs		Future volume		Turn Move Inputs	
North		North		SR	ST
1357	1050 801	1358	1150	329	448 273
1040	706 566	653	54	209	EL SL 203
		54		ET	WT 966
In - Out	4014 4014	62		ER	WL 189
				NL	NT NR
				62	389 115

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South East/West Scenario: 2040 Without Project  
 Intersection: SR-57 SB Rm at Orangehope Ave Time Period: Weekday PM

Future Link Inputs		Existing Counts		Turn Move Inputs	
North		Average		SR	
1303	398	1454	1137	185	2
1259	18	840	1137	EL	ST
In - Out	3132 3127 3129	224	840	ET	SL
		3	1137	ER	WT
		NL	NT	NR	WR
		4	5	11	388
					817
					13

**Average In-out volumes**

Link Inputs	
North	
1304	397
1258	18
In - Out	3129 3129 0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	2	167	185	354	397	0	2	187	208	
From S	5	0	11	4	20	20	5	0	11	4	
From E	388	13	0	817	1218	1454	463	16	0	975	
From W	224	3	840	0	1067	1258	264	4	990	0	
	To N	To S	To E	To W			ColTot	732	21	1189	1187
							Target	669	18	1138	1304
From N	0	2	179	228	410	397	0	2	174	221	
From S	5	0	11	4	19	20	5	0	11	5	
From E	423	13	0	1072	1508	1454	408	13	0	1033	
From W	241	3	948	0	1192	1258	254	3	1000	0	
	To N	To S	To E	To W			ColTot	667	18	1185	1259
							Target	669	18	1138	1304
From N	0	2	154	241	397	397	0	2	154	241	1,000
From S	5	0	10	5	20	20	5	0	10	5	1,000
From E	384	12	0	1058	1454	1454	384	12	0	1058	1,000
From W	280	4	974	0	1258	1258	280	4	974	0	1,000
	To N	To S	To E	To W			ColTot	669	18	1138	1304
							Target	669	18	1138	1304
							Pct	1,000	1,000	1,000	1,000

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	4	5	11	167	2	185	224	840	3	13	817	388
2040	5	4	9	154	1	241	280	974	3	12	1057	383
Existing + 10 pct	4	5	12	183	2	203	246	924	3	14	898	426
Max (2040, exist + 10pct)	5	5	12	179	2	241	280	970	3	14	1,057	426

Future Link outputs		Future volume		Turn Move Inputs	
North		Diff		SR	
1276	711	1470	1470	241	2
1253	19	1161	1161	EL	ST
In - Out	3167 3167 0	280	970	ET	SL
		3	1161	ER	WT
		NL	NT	NR	WR
		5	5	12	426
					1030
					14



Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: 2040 Without Project  
 Intersection: SR-57 NB Ram at Orangehope Ave Time Period: Weekday PM

Future Link Inputs			Existing Counts			Turn Move Inputs		
North								
1430	0	692	1748	195	0	0	0	0
1146	0	866	1639	832	0	0	0	422
		Average						1016
In - Out	3760	3760	3760	177	2	667		

Average In-out volumes

Link Inputs		
North		
1430	0	692
1146	0	866
In - Out	3760	3760

From	To N	To S	To E	To W	RowTt	Target	2 To N	To S	To E	To W
From N	0	0	0	0	0	0	0	0	0	0
From S	2	0	667	177	846	866	2	0	683	181
From E	422	0	0	1016	1438	1748	0	513	0	1235
From W	195	0	832	0	1027	1146	0	218	0	928
	To N	To S	To E	To W			ColTot	733	0	1611
							Target	692	0	1639
										1430

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	177	2	667	0	0	0	195	832	0	0	1016	422
2040	173	1	690	0	0	0	198	947	0	0	1256	491
Existing + 10 pct	194	2	733	0	0	0	214	915	0	0	1117	464
Max (2040, exist + 10pct)	194	2	733	0	0	0	214	947	0	0	1,256	491

Future Link outputs			Future volume			Turn Move Inputs		
North								
1470	0	707	1767	214	0	0	0	0
1161	0	929	1680	947	0	0	0	491
		Diff						1276
In - Out	3857	3857	3857	194	2	733		

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Melrose St at Orangehope Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs				
North												
1623	574	620	946	84	187	178	60	SR	ST	SL	WR	52
1369	518	1059	1186	953	ET	WT	699	ER	WL	44		
Average												
In - Out	3947	3948	3948	427	NL	NT	NR	427	333	68		

**Average In-out volumes**

Link Inputs			
North			
1623	574	620	946
1369	518	1059	1186
In - Out	3948	3948	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	178	60	187	425	574	From N	0	240	81	253		
From S	333	0	68	427	828	1059	From S	426	0	87	546		
From E	52	44	0	699	795	946	From E	62	52	0	82	532	
From W	84	192	953	0	1229	1369	From W	94	214	1061	0		
	To N	To S	To E	To W			ColTot	581	507	1229	1631		
							Target	620	518	1186	1623		
From N	0	246	78	251	576	574	From N	0	245	78	251		
From S	454	0	84	544	1082	1059	From S	445	0	82	532		
From E	66	54	0	828	948	946	From E	66	54	0	82	532	
From W	100	219	1024	0	1342	1369	From W	102	223	1044	0		
	To N	To S	To E	To W			ColTot	612	522	1204	1610		
							Target	620	518	1186	1623		
From N	0	241	75	258	574	574	From N	0	241	75	258		
From S	446	0	77	536	1059	1059	From S	446	0	77	536		
From E	66	51	0	829	946	946	From E	66	51	0	829		
From W	108	226	1034	0	1369	1369	From W	108	226	1034	0		
	To N	To S	To E	To W			ColTot	620	519	1187	1622		
							Target	620	518	1186	1623		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	427	333	68	60	178	187	84	953	192	44	699	52
2040	535	446	76	74	240	258	108	1034	226	51	829	65
Existing + 10 pct	469	366	74	66	195	205	92	1048	211	48	768	57
Max (2040, exist + 10pct)	535	446	76	74	240	258	108	1048	226	51	829	65

Future Link outputs				Future volume				Turn Move Inputs				
North												
1622	572	619	945	108	258	240	74	SR	ST	SL	WR	65
1382	517	1051	1198	1048	ET	WT	829	ER	WL	51		
Diff												
In - Out	3956	3956	0	226	NL	NT	NR	535	446	76		

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Kraemer Blvd at Orangehope Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
936	624	1294	583	936	624	1294	583	149	462	29	37
1071	752	1510	808	1071	752	1510	808	232	662	200	378
Average				Average				Average			
In - Out	3791	3791	3791	In - Out	3791	3791	3791	NL	NT	NR	WR
								252	929	128	458

**Average In-out volumes**

Link Inputs			
North			
936	624	1294	583
1071	752	1510	808
In - Out	3791	3791	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target							
From N	0	462	29	149	640	624	From N	0	451	28	145	624	2	0	451	28	145	624		
From S	929	0	128	252	1309	1510	From S	1072	0	148	291	1510	From S	1072	0	148	291	1510		
From E	37	75	0	378	490	585	From E	44	90	0	451	585	From E	44	90	0	451	585		
From W	232	200	662	0	1094	1071	From W	227	196	648	0	1071	From W	227	196	648	0	1071		
	To N	To S	To E	To W				ColTot	1343	736	824	887			ColTot	1294	752	808	936	
								Target	1294	752	808	936			Target	1294	752	808	936	
From N	0	460	28	153	642	624	From N	0	448	27	149	624	3	0	448	27	149	624		
From N	0	449	25	149	624	624	From N	0	449	25	149	624	20	0	449	25	149	624		
From S	1036	0	145	329	1510	1510	From S	1036	0	145	329	1510	From S	1036	0	145	329	1510		
From E	38	88	0	458	585	585	From E	38	88	0	458	585	From E	38	88	0	458	585		
From W	219	214	637	0	1071	1071	From W	219	214	637	0	1071	From W	219	214	637	0	1071		
	To N	To S	To E	To W				ColTot	1294	752	808	936			ColTot	1294	752	808	936	
								Target	1294	752	808	936			Target	1294	752	808	936	

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	
Existing	252	929	128	29	462	149	232	662	200	75	378	37
<b>2040</b>	<b>328</b>	<b>1036</b>	<b>145</b>	<b>25</b>	<b>449</b>	<b>149</b>	<b>219</b>	<b>637</b>	<b>214</b>	<b>88</b>	<b>458</b>	<b>38</b>
Existing + 10 pct	277	1021	140	31	508	163	255	728	220	82	415	40
Max (2040, exist + 10pct)	328	1,036	145	31	508	163	255	728	220	88	458	40

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
949	702	1331	586	949	702	1331	586	163	508	31	40
1203	816	1508	904	1203	816	1508	904	255	728	220	458
Diff				Diff				Diff			
In - Out	4000	4000	0	In - Out	4000	4000	0	NL	NT	NR	WR
								328	1036	145	38

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Crowther Ave/A at Orangehope Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
533	168	360	519	533	168	360	519	1	54	69	
713			872	668			872	2			51
201	566			54				ET		WT	317
								ER		WL	39
								NL	NT	NR	
In - Out	1965	1965	1965					120	133	144	

**Average In-out volumes**

Link Inputs			
North			
533	168	360	519
713			872
201	566		
In - Out	1965	1965	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W
From N	0	54	69	1	124	168	From N	0	73	93	1
From S	133	0	144	120	397	566	From S	189	0	205	171
From E	51	39	0	317	407	519	From E	65	50	0	404
From W	2	54	668	0	724	713	From W	2	53	658	0
	To N	To S	To E	To W			ColTot	256	176	956	577
							Target	360	201	872	533
From N	0	83	85	1	170	168	From N	0	82	84	1
From S	266	0	187	158	611	566	From S	246	0	173	146
From E	91	57	0	374	522	519	From E	91	56	0	372
From W	3	61	600	0	663	713	From W	3	65	645	0
	To N	To S	To E	To W			ColTot	340	204	902	519
							Target	360	201	872	533

Year	NL	NT	NR	SL	SR	EL	ER	WL	WT	WR
Existing	120	133	144	69	54	3	668	54	39	317
2040	154	262	148	82	84	1	641	67	48	377
Existing + 10 pct	132	146	158	75	59	1	734	59	42	348
Max (2040, exist + 10pct)	154	262	158	82	84	1	727	67	48	378

Future Link outputs				Future volume				Turn Move Inputs			
North											
533	167	359	520	520	967	3	727	1	84	82	
797			520	967			727	SR	ST	SL	94
199	574						67	ET		WT	378
								ER		WL	48
								NL	NT	NR	
In - Out	2058	2058	0					154	262	158	

Traffic Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Chapman Ave at East/West Orangehope Ave Scenario: 2040 Without Project  
 Intersection: Chapman Ave at Orangehope Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				East				West			
523	395	622	1043	61	817	29	0	300	344	382	382
869	0	0	1161	878	869	60	0	344	0	0	0
Average				Average				Average			
In - Out 2306 2306 2306				In - Out 2306 2306 2306				In - Out 0 0 0			

Average In-out volumes

Link Inputs			
North			
523	395	622	1043
869	0	0	1161
Average			
In - Out 2306 2306 0			

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	0	300	29	329	395	From N	0	0	360	35	395	395
From S	0	0	0	0	0	0	From S	0	0	0	0	0	0
From E	344	0	0	382	726	1043	From E	494	0	0	0	494	549
From W	61	0	817	0	878	869	From W	60	0	808	0	868	869
ColTot 555 0 1168 584							ColTot 555 0 1168 584						
Target 622 0 1161 523							Target 622 0 1161 523						
Pct 1.000 0.000 1.000 1.000							Pct 1.000 0.000 1.000 1.000						

Turn Movements and Traffic Volumes													
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
Existing	0	0	0	300	29	61	817	0	0	344	382	344	
2040	0	0	0	362	32	69	898	0	0	490	490	552	
Existing + 10 pct	0	0	0	330	31	67	898	0	0	420	378		
Max (2040, exist + 10pct)	0	0	0	362	32	69	898	0	0	488	552		

Future Link outputs				Future volume				Turn Move Inputs			
North				East				West			
520	394	621	1040	69	898	32	0	362	552	488	488
967	0	0	1260	869	869	60	0	344	0	0	0
Diff				Diff				Diff			
In - Out 2401 2401 0				In - Out 2401 2401 0				In - Out 0 0 0			

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Rose Dr at Del Cerro Dr Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
0	1072	1618		0	1072	1618		0	977	56	
0			235	0			235	SR	ST	SL	WR
0			210	0			210	EL	ER	WL	WT
0	1095	1616		0	1095	1616		ER	NR	NR	NR
			Average				Average	NL	NT	NR	NR
In - Out	2923	2923	2923	In - Out	2923	2923	2923	0	1304	154	

**Average In-out volumes**

Link Inputs			
North			
0	1072	1618	
0			235
0			210
0	1095	1616	
In - Out	2923	2923	0

From	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	977	56	0	1033	1072		0	1014	58	0
From S	1304	0	154	0	1458	1616		1446	0	171	0
From E	156	79	0	0	235	235		156	79	0	0
From W	0	0	0	0	0	0		0	0	0	0
	To N	To S	To E	To W			ColTot	1602	1093	229	0
							Target	1618	1095	210	0
From N	0	1016	53	0	1069	1072		0	1018	53	0
From S	1461	0	157	0	1617	1616		1460	0	156	0
From E	158	79	0	0	237	235		156	79	0	0
From W	0	0	0	0	0	0		0	0	0	0
	To N	To S	To E	To W			ColTot	1616	1097	210	0
							Target	1618	1095	210	0
From N	0	1017	54	0	1071	1072		0	1018	54	0
From S	1461	0	156	0	1617	1616		1461	0	156	0
From E	157	78	0	0	235	235		157	78	0	0
From W	0	0	0	0	0	0		0	0	0	0
	To N	To S	To E	To W			ColTot	1618	1095	210	0
							Target	1618	1095	210	0

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	0	1304	154	56	977	0	0	0	0	79	156
2040	0	1460	155	54	1017	0	0	0	0	77	157
Existing + 10 pct	0	1434	169	61	1074	0	0	0	0	86	171
Max (2040, exist + 10pct)	0	1460	169	61	1074	0	0	0	0	86	171

Future Link outputs				Future volume				Turn Move Inputs			
North											
0	1135	1631		0	1074	61		0	1074	61	
0			257	0			257	SR	ST	SL	WR
0			210	0			210	EL	ER	WL	WT
0	1160	1629		0	1160	1629		ER	NR	NR	NR
			Diff				Diff	NL	NT	NR	NR
In - Out	3021	3021	0	In - Out	3021	3021	0	0	1460	169	



**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Jefferson St at Orangehope Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				Average							
819	162	408	791	83	923	52	47	44	52	47	44
1188	126	392	1182	26	923	SR	ST	SL	SR	ST	SL
In - Out				2534	2535	2534	37	208	72	46	615

**Average In-out volumes**

Link Inputs			
North			
819	162	407	791
1189	126	393	1182
In - Out			
2534	2534	0	

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	47	44	52	143	162	From S	258	0	89	46	317	393
From S	258	0	72	37	317	393	From E	46	15	0	615	676	791
From E	46	15	0	615	676	791	From W	83	26	923	0	1032	1189
From W	83	26	923	0	1032	1189	ColTot	407	101	1202	824		
							Target	407	126	1182	819		
From N	0	67	49	59	174	162	From S	258	0	88	46	317	393
From S	258	0	88	45	391	393	From E	54	22	0	715	790	791
From E	54	22	0	715	790	791	From W	96	37	1045	0	1179	1189
From W	96	37	1045	0	1179	1189	ColTot	409	122	1188	815		
							Target	407	126	1182	819		
From N	0	64	44	55	162	162	From S	258	0	87	47	392	393
From S	258	0	87	47	392	393	From E	52	22	0	717	791	791
From E	52	22	0	717	791	791	From W	97	40	1051	0	1187	1189
From W	97	40	1051	0	1187	1189	ColTot	407	126	1182	819		
							Target	407	126	1182	819		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	37	208	72	44	47	52	83	923	26	15	615	46
<b>2040</b>	<b>47</b>	<b>258</b>	<b>87</b>	<b>43</b>	<b>63</b>	<b>54</b>	<b>97</b>	<b>1051</b>	<b>40</b>	<b>22</b>	<b>716</b>	<b>52</b>
Existing + 10 pct	40	228	79	48	51	57	91	1015	28	16	676	50
Max (2040, exist + 10pct)	47	258	83	45	63	57	97	1035	40	22	713	51

Future Link outputs				Future volume				Turn Move Inputs			
North				Diff							
817	165	406	786	786	97	51	57	63	45	51	51
1172	125	388	1163	1163	1035	713	40	22	22	22	22
In - Out				2511	2511	0	47	258	83		



**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: **2040 Without Project**  
 Intersection: Van Buren St at Orangehope Ave Time Period: **Weekday PM**

Future Link Inputs				Existing Counts				Turn Move Inputs			
North											
767	183	330	757	127	884	33	46	57	83	43	46
1131	136	265	1103	884	33	46		SR	ST	SL	WR
Average											
In - Out	2336	2337	2337								

**Average In-out volumes**

Link Inputs			
North			
767	183	330	757
1131	136	265	1103
In - Out	2337	2337	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W
From N	0	83	43	57	183	183	From N	0	81	49	53
From S	157	0	62	46	265	265	From S	153	0	70	42
From E	46	20	0	587	653	757	From E	55	24	0	672
From W	127	33	884	0	1044	1131	From W	122	31	984	0
	To N	To S	To E	To W				To N	To S	To E	To W
ColTot	348	142	1063	784			ColTot	330	136	1103	767
Target	330	136	1103	767			Target	330	136	1103	767

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	46	157	62	43	83	57	127	884	33	20	587
2040	40	152	71	50	80	51	119	981	30	24	674
Existing + 10 pct	50	172	68	47	91	62	139	972	36	22	645
Max (2040, exist + 10pct)	50	172	71	50	91	62	140	983	40	24	674

Future Link outputs				Future volume				Turn Move Inputs			
North											
786	203	369	755	140	983	40	50	62	91	50	57
1163	155	293	1104	983	40	50		SR	ST	SL	WR
Diff											
In - Out	2414	2414	0								

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Richfield Rd at Orangehoop Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				East				South			
730	390	775	744	93	37	153	62	37	153	62	37
1073	322	592	972	823	43	99	56	99	56	99	56
Average				Average				Average			
In - Out	2799	2799	2799	42	315	85	52	42	315	85	52

**Average In-out volumes**

Link Inputs			
North			
730	390	775	744
1073	322	592	972
In - Out	2799	2799	0

From	To N	To S	To E	To W	RowTt	Target	From	To N	To S	To E	To W	RowTt	Target
From N	0	153	62	37	252	390	From S	315	0	85	42	442	592
From S	315	0	85	42	442	592	From E	92	52	0	547	691	744
From E	92	52	0	547	691	744	From W	93	43	823	0	959	1073
From W	93	43	823	0	959	1073	ColTot	625	341	1131	702	775	775
	To N	To S	To E	To W			Target	775	322	972	730		
From N	0	231	78	82	391	390	From S	473	0	64	55	592	592
From S	473	0	64	55	592	592	From E	114	39	0	594	744	744
From E	114	39	0	594	744	744	From W	188	52	830	0	1070	1073
From W	188	52	830	0	1070	1073	ColTot	775	322	975	728	775	775
	To N	To S	To E	To W			Target	775	322	972	730		
From N	0	231	77	82	390	390	From S	473	0	63	56	592	592
From S	473	0	63	56	592	592	From E	113	38	0	593	744	744
From E	113	38	0	593	744	744	From W	189	53	831	0	1073	1073
From W	189	53	831	0	1073	1073	ColTot	775	322	972	730	775	775
	To N	To S	To E	To W			Target	775	322	972	730		

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR
Existing	42	315	85	62	153	37	93	823	43	52	547
2040	55	472	63	77	230	82	189	831	52	38	592
Existing + 10 pct	46	346	93	68	168	40	102	905	47	57	601
Max (2040, exist + 10pct)	55	472	93	77	230	82	189	905	52	57	601

Future Link outputs				Future volume				Turn Move Inputs			
North				East				South			
738	389	773	770	189	82	230	77	189	82	230	77
1146	339	620	1075	905	52	38	592	905	52	38	592
Diff				Diff				Diff			
In - Out	2925	2925	0	55	472	93	601	55	472	93	601

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Van Buren St at Miraloma Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs				
North												
364	180	261	333	82	39	131	10	SR	ST	SL	WR	25
338	188	210	245	206	ET	29	28	ET	WT	WT	WT	227
		Average		29	ER	WT	28	ER	WL	WL	NR	28
In - Out	1060	1057	1059		NL	NT	NR	44	154	12		

Average In-out volumes

Link Inputs			
North			
364	180	261	333
338	188	210	245
In - Out	1059	1059	0

1	To N	To S	To E	To W	RowTt	Target	2	To N	To S	To E	To W
From N	0	131	10	39	180	180	0	131	10	39	0
From S	154	0	12	44	210	210	154	0	12	44	0
From E	25	28	0	227	280	332	25	28	0	227	269
From W	82	29	206	0	317	338	82	29	206	0	219
	To N	To S	To E	To W			ColTot	271	195	241	352
							Target	261	188	245	364

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	44	154	12	10	131	39	82	206	29	28	227	25
2040	47	149	12	10	127	42	90	222	30	30	274	27
Existing + 10 pct	48	169	13	11	144	42	90	226	31	30	249	27
Max (2040, exist + 10pct)	48	169	13	11	144	42	90	226	31	30	274	27

Future Link outputs				Future volume				Turn Move Inputs				
North												
364	197	286	331	90	42	144	11	SR	ST	SL	WR	27
347	205	230	250	226	ET	31	28	ET	WT	WT	WT	274
		Diff		31	ER	WT	28	ER	WL	WL	NR	30
In - Out	1105	1105	0		NL	NT	NR	48	169	13		

**Turn Movement Forecast: Row-Column-Sum Method**

Street Alignment: North/South at East/West Scenario: 2040 Without Project  
 Intersection: Richfield Rd at Miraloma Ave Time Period: Weekday PM

Future Link Inputs				Existing Counts				Turn Move Inputs			
North				South				East			
294	359	528	248	57	162	26	29	36	225	29	47
271	415	537	182	162	26	29	11	SR	ST	SL	WR
Average				Average				Average			
In - Out 1415 1419 1417				In - Out 1417 1417 0				In - Out 1417 1417 0			

**Average In-out volumes**

Link Inputs			
North			
293	359	528	248
272	415	538	181
In - Out 1417 1417 0			

From	To N	To S	To E	To W	RowTl	Target	From	To N	To S	To E	To W	RowTl	Target			
From N	0	225	29	36	290	359	From N	0	279	36	45	314	31			
From S	277	0	11	29	317	538	From S	470	0	19	49	314	31			
From E	47	17	0	157	221	248	From E	53	19	0	16	314	31			
From W	57	26	162	0	245	272	From W	63	29	180	0	314	31			
To N To S To E To W							ColTot	586	327	234	270	ColTot	528	415	181	293
To N To S To E To W							Target	528	415	181	293	Target	528	415	181	293

**Turn Movements and Traffic Volumes**

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	29	277	11	29	225	36	57	162	26	17	157	47
2040	78	441	17	31	314	39	62	178	28	18	172	51
Existing + 10 pct	31	304	12	31	247	39	62	178	28	18	172	51
Max (2040, exist + 10pct)	78	441	17	31	314	39	62	178	28	18	172	51

Future Link outputs				Future volume				Turn Move Inputs			
North				South				East			
300	384	554	266	62	178	28	18	39	314	31	51
300	414	536	226	178	28	18	17	SR	ST	SL	WR
In - Out 1494 1494 0				In - Out 1494 1494 0				In - Out 1494 1494 0			

# **APPENDIX E – PROPOSED GENERAL PLAN LAND USE AND TRAFFIC FORECASTING**

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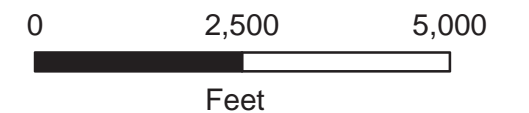
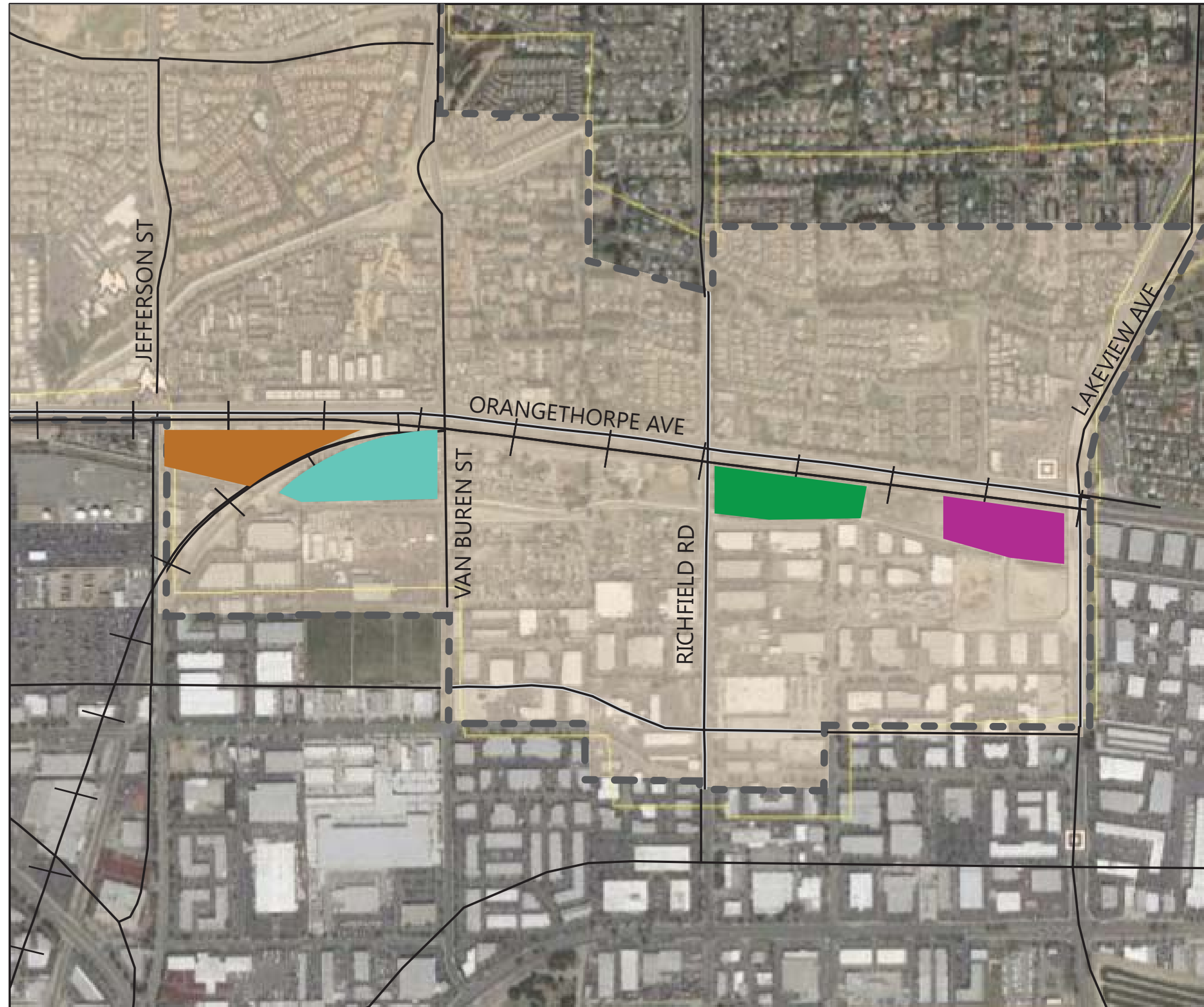
GENERAL PLAN

**CITY of PLACENTIA  
General Plan Update**

**Land Use Changed Locations  
from Existing General Plan  
to Proposed General Plan  
Detailed Map**

**Legend**

-  Zone 1: From Light Industrial to High Density Residential
-  Zone 2: From Industrial to High Density Residential
-  Zone 3: From Industrial to High Density Residential
-  Zone 4: From Industrial to High Density Residential
-  Placentia City Limit



**Placentia General Plan Mobility Element Update Technical Traffic Study**  
**Future Land Use Zone 1: Light Industrial to High Density Residential Land Use Trip Generation**

Area of the Zone (Acres) 3.65 Assumed FAR for industrial use 0.2  
 Area of the Zone (k.s.f.) 158.994 Assumed units per acre for High Density Residential 25

Land Use	ITE Code	Intensity	Weekday							
			Average Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
<b>Trip Generation Rates *</b>										
Light industrial	110		k.s.f <sup>1</sup>	4.96	88%	12%	0.70	13%	87%	0.63
High Density Residential	221		Unit	5.44	26%	74%	0.36	61%	39%	0.44
<b>Current GP</b>										
Light industrial	110	31.799	k.s.f.	(158)	(19)	(3)	(22)	(3)	(17)	(20)
<b>Proposed GP</b>										
High Density Residential	222	91	Units	496	9	24	33	24	16	40
<b>Estimated Net Trips</b>										
Total				<b>338</b>	<b>(10)</b>	<b>21</b>	<b>11</b>	<b>21</b>	<b>(1)</b>	<b>20</b>

Source: ITE, 10th Edition

\*Note 1: k..s.f. - 1,000 Sq. Feet Gross Floor Area



GENERAL PLAN

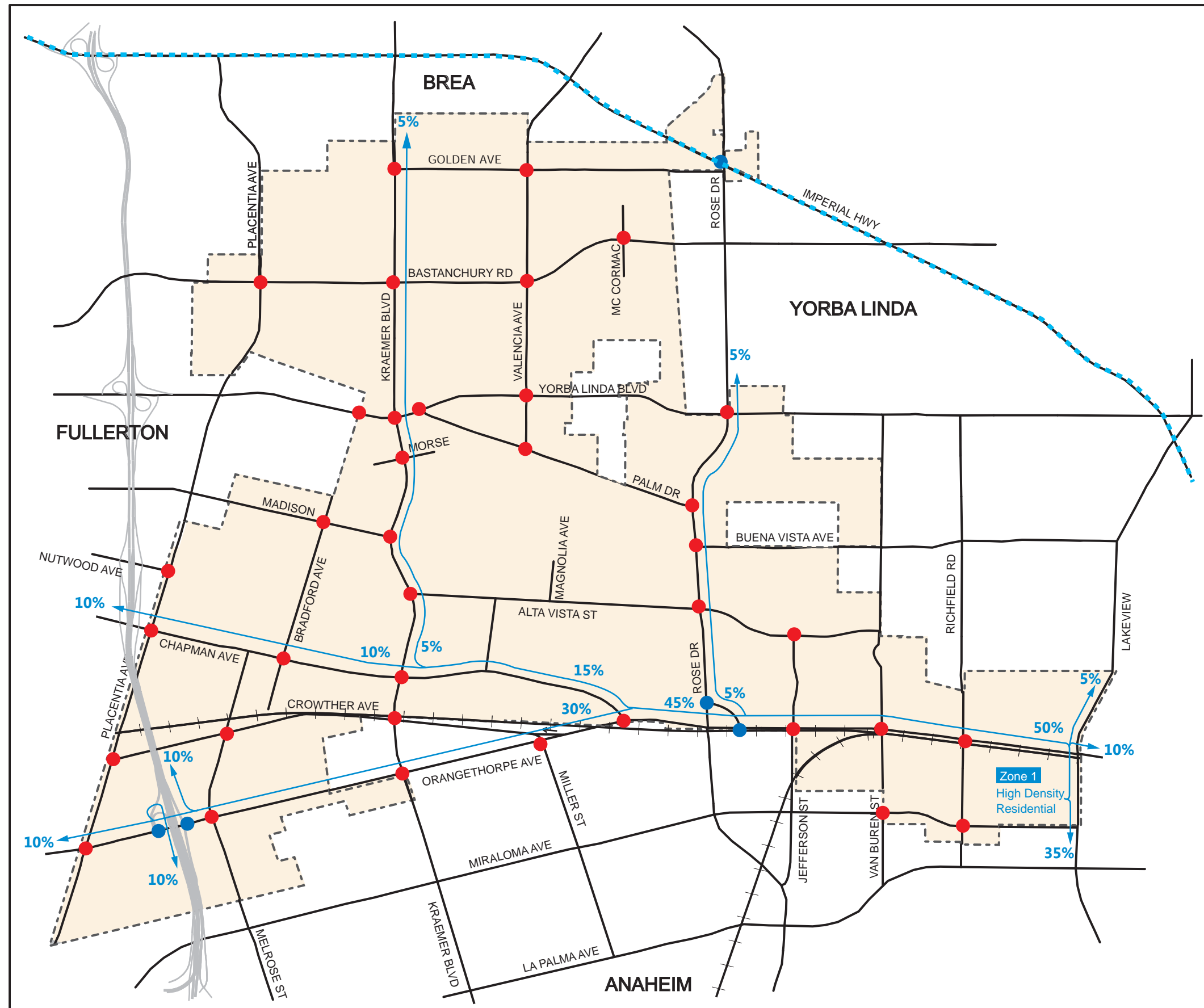
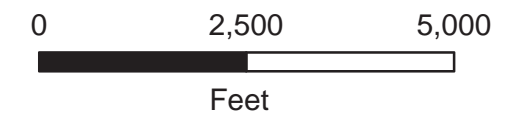
# CITY of PLACENTIA General Plan Update

## Future General Plan Land Uses

Zone #1: Light Industrial to  
High Density Residential

### Legend

- Placentia City Limits
- ++++ Railroad
- Study Intersections
- Study CMP Intersections
- CMP Routes
- Trip Distribution (XX%)





**Placentia General Plan Mobility Element Update Technical Traffic Study**  
**Future Land Use Zone 2: Industrial to High Density Residential Land Use Trip Generation**

Area of the Zone (Acres) 4.12 Assumed FAR for industrial use 0.2  
 Area of the Zone (k.s.f.) 179.467 Assumed units per acre for High Density Residential 25

Land Use	ITE Code	Intensity	Weekday							
			Average Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
<b>Trip Generation Rates *</b>										
Industrial	130		k.s.f <sup>1</sup>	3.37	81%	19%	0.40	21%	79%	0.40
High Density Residential	221		Unit	5.44	26%	74%	0.36	61%	39%	0.44
<b>Current GP</b>										
Industrial	130	35.893	k.s.f.	(121)	(11)	(3)	(14)	(3)	(11)	(14)
<b>Proposed GP</b>										
High Density Residential	222	103	Units	560	10	27	37	27	18	45
<b>Estimated Net Trips</b>										
Total				<b>439</b>	<b>(1)</b>	<b>24</b>	<b>23</b>	<b>24</b>	<b>7</b>	<b>31</b>

Source: ITE, 10th Edition

\*Note 1: k.s.f. - 1,000 Sq. Feet Gross Floor Area



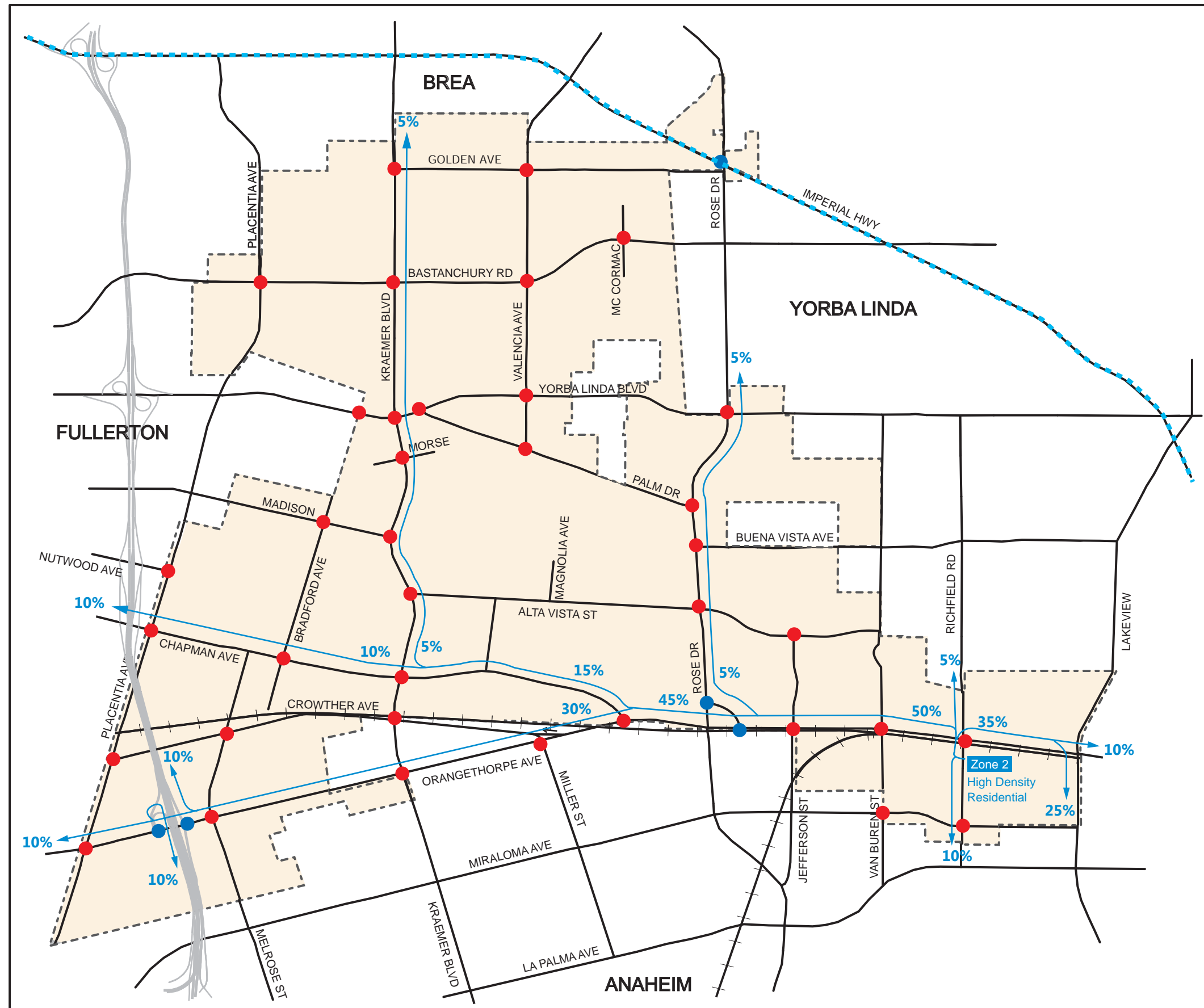
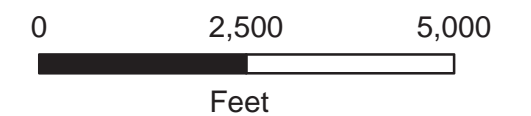
**CITY of PLACENTIA  
General Plan Update**

**Future General Plan  
Land Uses**

Zone #2: Industrial to  
High Density Residential

**Legend**

- Placentia City Limits
- +++++ Railroad
- Study Intersections
- Study CMP Intersections
- CMP Routes
- Trip Distribution (XX%)



**Placentia General Plan Mobility Element Update Technical Traffic Study**  
**Future Land Use Zone 3: Industrial to High Density Residential Land Use Trip Generation**

Area of the Zone (Acres) 6.37 Assumed FAR for industrial use 0.2  
 Area of the Zone (k.s.f.) 277.477 Assumed units per acre for High Density Residential 25

Land Use	ITE Code	Intensity	Weekday							
			Average Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
<b>Trip Generation Rates *</b>										
Industrial	130		k.s.f <sup>1</sup>	3.37	81%	19%	0.40	21%	79%	0.40
High Density Residential	221		Unit	5.44	26%	74%	0.36	61%	39%	0.44
<b>Current GP</b>										
Industrial	130	55.495	k.s.f.	(187)	(18)	(4)	(22)	(5)	(17)	(22)
<b>Proposed GP</b>										
High Density Residential	222	159	Units	866	15	42	57	43	27	70
<b>Estimated Net Trips</b>										
Total				<b>679</b>	<b>(3)</b>	<b>38</b>	<b>35</b>	<b>38</b>	<b>10</b>	<b>48</b>

Source: ITE, 10th Edition

\*Note 1: k.s.f. - 1,000 Sq. Feet Gross Floor Area



GENERAL PLAN

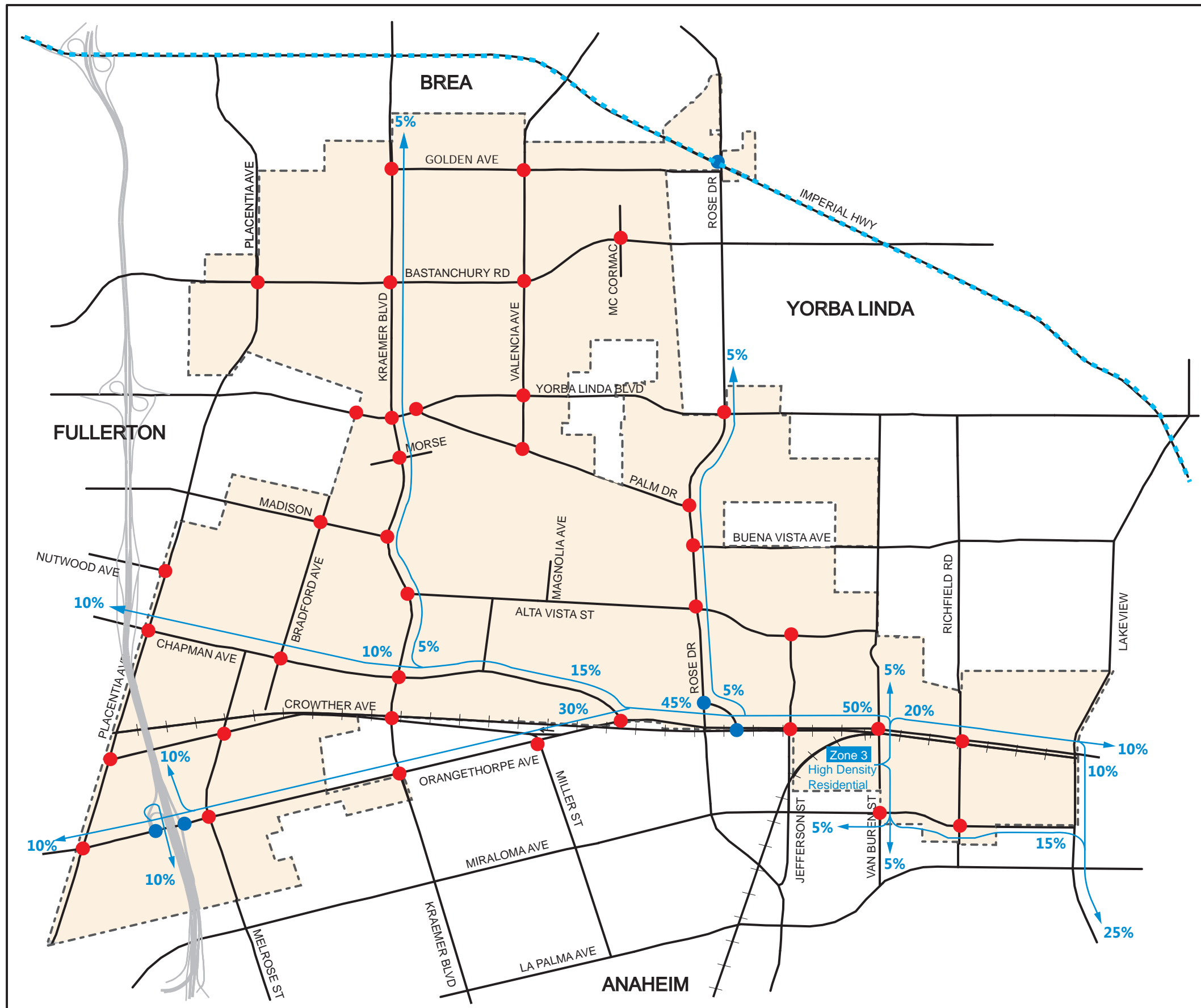
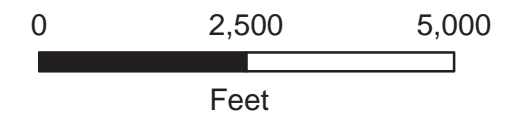
# CITY of PLACENTIA General Plan Update

## Future General Plan Land Uses

Zone #3: Industrial to  
High Density Residential

### Legend

- Placentia City Limits
- ++++ Railroad
- Study Intersections
- Study CMP Intersections
- CMP Routes
- Trip Distribution (XX%)



**Placentia General Plan Mobility Element Update Technical Traffic Study**  
**Future Land Use Zone 4: Industrial to High Density Residential Land Use Trip Generation**

Area of the Zone (Acres) 5.03 Assumed FAR for industrial use 0.2  
 Area of the Zone (k.s.f.) 219.107 Assumed units per acre for High Density Residential 25

Land Use	ITE Code	Intensity	Weekday							
			Average Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
<b>Trip Generation Rates *</b>										
Industrial	130		k.s.f <sup>1</sup>	3.37	81%	19%	0.40	21%	79%	0.40
High Density Residential	221		Unit	5.44	26%	74%	0.36	61%	39%	0.44
<b>Current GP</b>										
Industrial	130	43.821	k.s.f.	(148)	(15)	(3)	(18)	(4)	(14)	(18)
<b>Proposed GP</b>										
High Density Residential	222	126	Units	684	12	33	45	34	21	55
<b>Estimated Net Trips</b>										
Total				<b>536</b>	<b>(3)</b>	<b>30</b>	<b>27</b>	<b>30</b>	<b>7</b>	<b>37</b>

Source: ITE, 10th Edition

\*Note 1: k..s.f. - 1,000 Sq. Feet Gross Floor Area



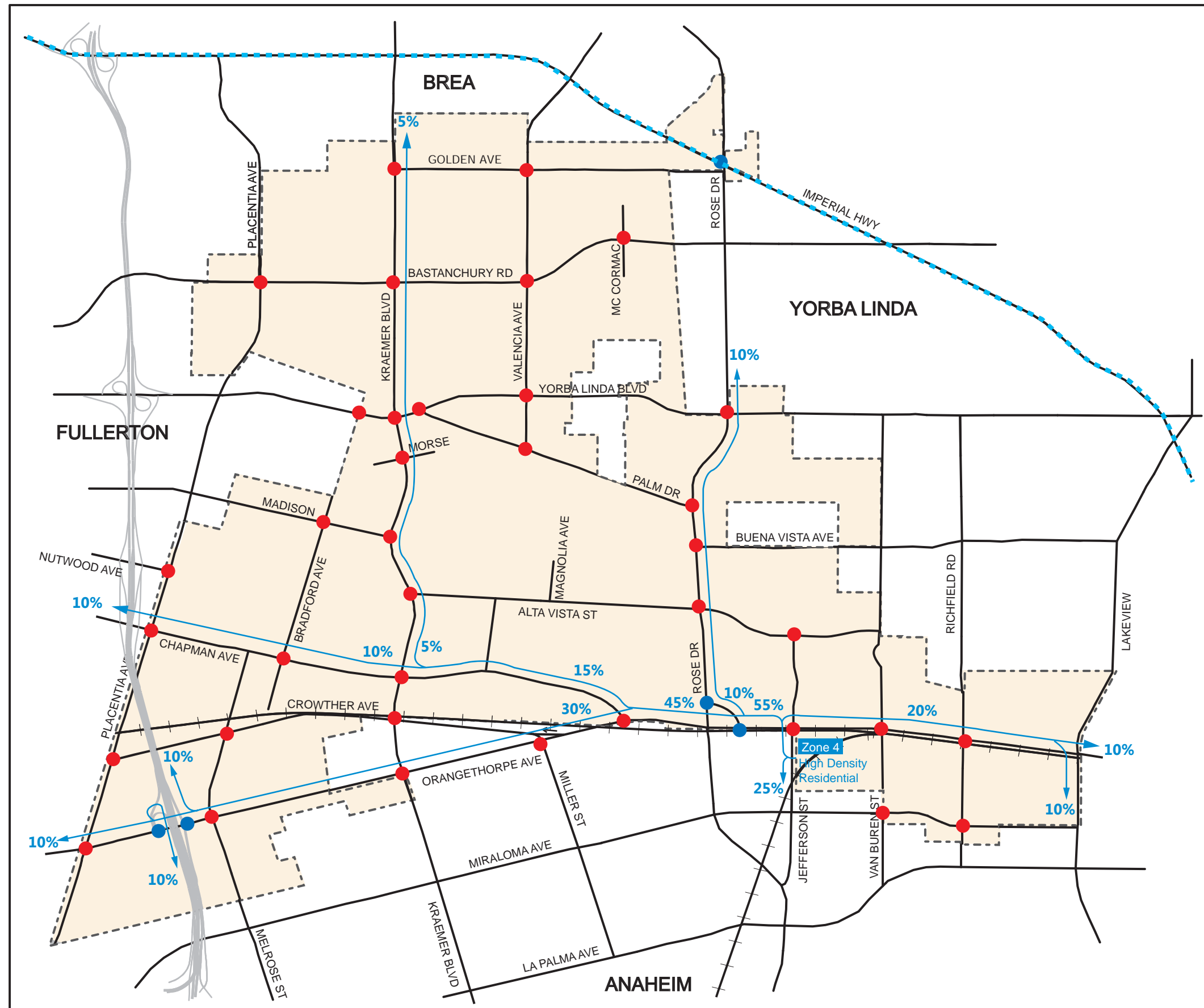
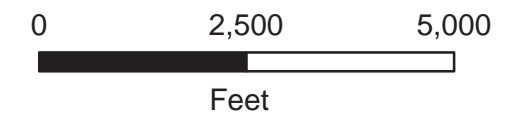
**CITY of PLACENTIA  
General Plan Update**

**Future General Plan  
Land Uses**

Zone #4: Industrial to  
High Density Residential

**Legend**

- Placentia City Limits
- +++++ Railroad
- Study Intersections
- Study CMP Intersections
- ..... CMP Routes
- Trip Distribution (XX%)



## **APPENDIX F – EXISTING INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

---

## Scenario Report

Scenario: Existing AM

Command: Existing AM  
 Volume: Existing AM  
 Geometry: Existing  
 Impact Fee: Default Impact Fee  
 Trip Generation: None  
 Trip Distribution: None  
 Paths: Default Path  
 Routes: Default Route  
 Configuration: Default Configuration

Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/	V/	Del/	V/	
	LOS	Veh C	LOS	Veh C	
# 1 Golden and Kraemer	A	xxxxx 0.425	A	xxxxx 0.425	+ 0.000 V/C
# 2 Golden and Valencia	A	xxxxx 0.478	A	xxxxx 0.478	+ 0.000 V/C
# 3 Imperial and Rose	C	xxxxx 0.758	C	xxxxx 0.758	+ 0.000 V/C
# 4 Placentia and Bastanchury	B	xxxxx 0.690	B	xxxxx 0.690	+ 0.000 V/C
# 5 Kraemer and Bastanchury	B	xxxxx 0.669	B	xxxxx 0.669	+ 0.000 V/C
# 6 Valencia and Bastanchury	B	xxxxx 0.687	B	xxxxx 0.687	+ 0.000 V/C
# 7 McCormac and Bastanchury	A	xxxxx 0.504	A	xxxxx 0.504	+ 0.000 V/C
# 8 Yorba Linda and Bradford	B	xxxxx 0.607	B	xxxxx 0.607	+ 0.000 V/C
# 9 Yorba Linda and Kraemer	B	xxxxx 0.652	B	xxxxx 0.652	+ 0.000 V/C
# 10 Yorba Linda and Palm	A	xxxxx 0.589	A	xxxxx 0.589	+ 0.000 V/C
# 11 Yorba Linda and Valencia	D	xxxxx 0.836	D	xxxxx 0.836	+ 0.000 V/C
# 12 Yorba Linda and Rose	C	xxxxx 0.751	C	xxxxx 0.751	+ 0.000 V/C
# 13 Kraemer and Morse	B	xxxxx 0.677	B	xxxxx 0.677	+ 0.000 V/C
# 14 Palm and Valencia	B	14.9 0.528	B	14.9 0.528	+ 0.000 V/C
# 15 Palm and Rose	D	xxxxx 0.838	D	xxxxx 0.838	+ 0.000 V/C
# 16 Madison and Bradford	B	xxxxx 0.634	B	xxxxx 0.634	+ 0.000 V/C
# 17 Madison and Kraemer	E	xxxxx 0.917	E	xxxxx 0.917	+ 0.000 V/C
# 18 Buena Vista and Rose	D	xxxxx 0.835	D	xxxxx 0.835	+ 0.000 V/C
# 19 Nutwood and Placentia	C	xxxxx 0.705	C	xxxxx 0.705	+ 0.000 V/C
# 20 Alta Vista and Kraemer	C	xxxxx 0.773	C	xxxxx 0.773	+ 0.000 V/C
# 21 Alta Vista and Rose	C	xxxxx 0.714	C	xxxxx 0.714	+ 0.000 V/C
# 22 Alta Vista and Jefferson	A	xxxxx 0.335	A	xxxxx 0.335	+ 0.000 V/C
# 23 Chapman and Placentia	A	xxxxx 0.600	A	xxxxx 0.600	+ 0.000 V/C
# 24 Chapman and Bradford	B	xxxxx 0.697	B	xxxxx 0.697	+ 0.000 V/C
# 25 Chapman and Kraemer	C	xxxxx 0.722	C	xxxxx 0.722	+ 0.000 V/C



Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 26 Crowther and Placentia	A xxxxx	0.457	A xxxxx	0.457	+ 0.000 V/C
# 27 Crowther and Melrose	A xxxxx	0.392	A xxxxx	0.392	+ 0.000 V/C
# 28 Crowther and Kraemer	A xxxxx	0.572	A xxxxx	0.572	+ 0.000 V/C
# 29 Orangethorpe and Placentia	A xxxxx	0.494	A xxxxx	0.494	+ 0.000 V/C
# 30 Orangethorpe and SR-57 SB Ramp	A xxxxx	0.512	A xxxxx	0.512	+ 0.000 V/C
# 31 Orangethorpe and SR-57 NB Ramp	B xxxxx	0.691	B xxxxx	0.691	+ 0.000 V/C
# 32 Orangethorpe and Melrose	B xxxxx	0.607	B xxxxx	0.607	+ 0.000 V/C
# 33 Orangethorpe and Kraemer	C xxxxx	0.744	C xxxxx	0.744	+ 0.000 V/C
# 34 Orangethorpe and Miller/Crowth	A xxxxx	0.333	A xxxxx	0.333	+ 0.000 V/C
# 35 Orangethorpe and Chapman	A xxxxx	0.401	A xxxxx	0.401	+ 0.000 V/C
# 36 Rose Drive and Del Cerro Dr	B xxxxx	0.636	B xxxxx	0.636	+ 0.000 V/C
# 37 Orangethorpe and Del Cerro Dr	A xxxxx	0.318	A xxxxx	0.318	+ 0.000 V/C
# 38 Orangethorpe and Jefferson	A xxxxx	0.432	A xxxxx	0.432	+ 0.000 V/C
# 39 Orangethorpe and Van Buren	A xxxxx	0.495	A xxxxx	0.495	+ 0.000 V/C
# 40 Orangethorpe and Richfield	A xxxxx	0.481	A xxxxx	0.481	+ 0.000 V/C
# 41 Van Buren and Miraloma	B 11.1	0.331	B 11.1	0.331	+ 0.000 V/C
# 42 Miraloma and Richfield	A xxxxx	0.258	A xxxxx	0.258	+ 0.000 V/C

Level Of Service Computation Report  
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*  
Intersection #1 Golden and Kraemer  
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.425  
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 21 Level Of Service: A  
\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			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	0	0	1	0	0	1	0

Volume Module:

Base Vol:	22	501	82	113	661	9	8	4	12	183	13	170
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:	22	501	82	113	661	9	8	4	12	183	13	170
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:	22	501	82	113	661	9	8	4	12	183	13	170
User 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
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	25	571	94	129	754	10	9	5	14	209	15	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	571	94	129	754	10	9	5	14	209	15	194
PCE 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
MLF 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
Final Volume:	25	571	94	129	754	10	9	5	14	209	15	194

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	2.00	1.00	0.67	0.33	1.00	1.00	1.00	1.00
Final Sat.:	1700	3400	1700	1700	3400	1700	1133	567	1700	1700	1700	1700

Capacity Analysis Module:

Vol/Sat:	0.01	0.17	0.06	0.08	0.22	0.01	0.01	0.01	0.01	0.12	0.01	0.11
Crit Moves:	****			****			****		****			****

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Level Of Service Computation Report

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

Intersection #2 Golden and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.478
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.758
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 45 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #4 Placentia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.690
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with columns: Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North, South, East, West bounds.

Volume Module:

Table with columns: 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, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #5 Kraemer and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.669
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: B

Table with columns: Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North, South, East, West bounds.

Volume Module:

Table with columns: 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, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #6 Valencia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #7 McCormac and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.504
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #8 Yorba Linda and Bradford

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #9 Yorba Linda and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.652
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #10 Yorba Linda and Palm

Cycle (sec): 100 Critical Vol./Cap.(X): 0.589
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #11 Yorba Linda and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.836
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #12 Yorba Linda and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.751
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #13 Kraemer and Morse

Cycle (sec): 100 Critical Vol./Cap.(X): 0.677
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 Palm and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.528
Loss Time (sec): 5 Average Delay (sec/veh): 14.9
Optimal Cycle: 0 Level of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing traffic volumes and 12 rows for various adjustment factors like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.838
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing traffic volumes and 12 rows for various adjustment factors like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.



Level Of Service Computation Report

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

Intersection #16 Madison and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and 12 rows of metrics 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 Final Volume.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #17 Madison and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.917
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 98 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and 12 rows of metrics 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 Final Volume.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #18 Buena Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.835
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: D

Table with columns: Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North, South, East, West bounds.

Volume Module:

Table with columns: 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, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #19 Nutwood and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.705
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with columns: Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North, South, East, West bounds.

Volume Module:

Table with columns: 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, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #20 Alta Vista and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.773
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #21 Alta Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.714
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #22 Alta Vista and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.335
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module:

Table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns and 3 rows showing Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report

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

Intersection #23 Chapman and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.600
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module:

Table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns and 3 rows showing Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report

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

Intersection #24 Chapman and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.697
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 37 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.722
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #26 Crowther and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.457
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes for different movements and 11 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.

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Level Of Service Computation Report

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

Intersection #27 Crowther and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.392
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes for different movements and 11 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.

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Level Of Service Computation Report

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

Intersection #28 Crowther and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.572
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #29 Orangethorpe and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.494
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #30 Orangethorpe and SR-57 SB Ramp/Iowa Pl

Cycle (sec): 100 Critical Vol./Cap.(X): 0.512
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.



Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases. Rows include 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 Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #33 Orangethorpe and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.744
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases. Rows include 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 Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #34 Orangethorpe and Miller/Crowther

Cycle (sec): 100 Critical Vol./Cap.(X): 0.333
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns for different approaches and movements. Rows include 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 Final Volume.

Saturation Flow Module table with 12 columns for different approaches and movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for different approaches and movements. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #35 Orangethorpe and Chapman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.401
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns for different approaches and movements. Rows include 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 Final Volume.

Saturation Flow Module table with 12 columns for different approaches and movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for different approaches and movements. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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 Intersection #36 Rose Drive and Del Cerro Dr  
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Cycle (sec): 100 Critical Vol./Cap.(X): 0.636  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 44 Level Of Service: B  
 \*\*\*\*\*

Street Name:	Rose Drive						Del Cerro Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			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:	0	0	2	1	0	2	0	0	0	0	1	0

Volume Module:

Base Vol:	0	504	49	69	1646	0	0	0	0	187	0	83
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:	0	504	49	69	1646	0	0	0	0	187	0	83
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:	0	504	49	69	1646	0	0	0	0	187	0	83
User 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
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	548	53	75	1789	0	0	0	0	203	0	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	548	53	75	1789	0	0	0	0	203	0	90
PCE 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
MLF 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
FinalVolume:	0	548	53	75	1789	0	0	0	0	203	0	90

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:	0.00	2.73	0.27	1.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	4648	452	1700	3400	0	0	0	0	3400	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.12	0.12	0.04	0.53	0.00	0.00	0.00	0.00	0.06	0.00	0.05
Crit Moves:	***			***			***			***		

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Level Of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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 Intersection #37 Orangethorpe and Del Cerro Dr  
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Cycle (sec): 100 Critical Vol./Cap.(X): 0.318  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 18 Level Of Service: A  
 \*\*\*\*\*

Street Name:	Del Cerro Dr						Orangethorpe					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			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:	0	0	0	0	0	2	1	0	0	2	0	3

Volume Module:

Base Vol:	0	0	0	58	0	77	108	477	0	0	772	149
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:	0	0	0	58	0	77	108	477	0	0	772	149
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:	0	0	0	58	0	77	108	477	0	0	772	149
User 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
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	63	0	84	117	518	0	0	839	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	63	0	84	117	518	0	0	839	162
PCE 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
MLF 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
FinalVolume:	0	0	0	63	0	84	117	518	0	0	839	162

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:	0.00	0.00	0.00	1.00	0.00	2.00	2.00	3.00	0.00	0.00	2.51	0.49
Final Sat.:	0	0	0	1700	0	3400	3400	5100	0	0	4275	825

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.02	0.03	0.10	0.00	0.00	0.20	0.20
Crit Moves:	***			***			***			***		

\*\*\*\*\*

Level Of Service Computation Report

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

Intersection #38 Orangethorpe and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.432
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #39 Orangethorpe and Van Buren

Cycle (sec): 100 Critical Vol./Cap.(X): 0.495
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level of Service Computation Report

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

Intersection #40 Orangethorpe and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.481
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and Delay/Veh.

\*\*\*\*\*

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #41 Van Buren and Miraloma

Cycle (sec): 100 Critical Vol./Cap.(X): 0.331
Loss Time (sec): 5 Average Delay (sec/veh): 11.1
Optimal Cycle: 0 Level of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and Delay/Veh.

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Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report

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

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Intersection #42 Miraloma and Richfield
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.258
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 16 Level Of Service: A
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows of adjustment factors like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows showing Vol/Sat, Crit Moves, and a summary row.

## Scenario Report

Scenario: Existing PM

Command: Existing PM  
 Volume: Existing PM  
 Geometry: Existing  
 Impact Fee: Default Impact Fee  
 Trip Generation: None  
 Trip Distribution: None  
 Paths: Default Path  
 Routes: Default Route  
 Configuration: Default Configuration

Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/	V/	Del/	V/	
	LOS	Veh C	LOS	Veh C	
# 1 Golden and Kraemer	A	xxxxx 0.451	A	xxxxx 0.451	+ 0.000 V/C
# 2 Golden and Valencia	A	xxxxx 0.284	A	xxxxx 0.284	+ 0.000 V/C
# 3 Imperial and Rose	D	xxxxx 0.835	D	xxxxx 0.835	+ 0.000 V/C
# 4 Placentia and Bastanchury	C	xxxxx 0.745	C	xxxxx 0.745	+ 0.000 V/C
# 5 Kraemer and Bastanchury	C	xxxxx 0.712	C	xxxxx 0.712	+ 0.000 V/C
# 6 Valencia and Bastanchury	A	xxxxx 0.562	A	xxxxx 0.562	+ 0.000 V/C
# 7 McCormac and Bastanchury	A	xxxxx 0.398	A	xxxxx 0.398	+ 0.000 V/C
# 8 Yorba Linda and Bradford	B	xxxxx 0.650	B	xxxxx 0.650	+ 0.000 V/C
# 9 Yorba Linda and Kraemer	C	xxxxx 0.719	C	xxxxx 0.719	+ 0.000 V/C
# 10 Yorba Linda and Palm	A	xxxxx 0.498	A	xxxxx 0.498	+ 0.000 V/C
# 11 Yorba Linda and Valencia	B	xxxxx 0.632	B	xxxxx 0.632	+ 0.000 V/C
# 12 Yorba Linda and Rose	C	xxxxx 0.749	C	xxxxx 0.749	+ 0.000 V/C
# 13 Kraemer and Morse	A	xxxxx 0.493	A	xxxxx 0.493	+ 0.000 V/C
# 14 Palm and Valencia	B	14.9 0.528	B	14.9 0.528	+ 0.000 V/C
# 15 Palm and Rose	B	xxxxx 0.630	B	xxxxx 0.630	+ 0.000 V/C
# 16 Madison and Bradford	A	xxxxx 0.494	A	xxxxx 0.494	+ 0.000 V/C
# 17 Madison and Kraemer	A	xxxxx 0.549	A	xxxxx 0.549	+ 0.000 V/C
# 18 Buena Vista and Rose	B	xxxxx 0.683	B	xxxxx 0.683	+ 0.000 V/C
# 19 Nutwood and Placentia	A	xxxxx 0.539	A	xxxxx 0.539	+ 0.000 V/C
# 20 Alta Vista and Kraemer	C	xxxxx 0.743	C	xxxxx 0.743	+ 0.000 V/C
# 21 Alta Vista and Rose	B	xxxxx 0.613	B	xxxxx 0.613	+ 0.000 V/C
# 22 Alta Vista and Jefferson	A	xxxxx 0.284	A	xxxxx 0.284	+ 0.000 V/C
# 23 Chapman and Placentia	B	xxxxx 0.656	B	xxxxx 0.656	+ 0.000 V/C
# 24 Chapman and Bradford	B	xxxxx 0.616	B	xxxxx 0.616	+ 0.000 V/C
# 25 Chapman and Kraemer	A	xxxxx 0.581	A	xxxxx 0.581	+ 0.000 V/C

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 26 Crowther and Placentia	A xxxxx	0.501	A xxxxx	0.501	+ 0.000 V/C
# 27 Crowther and Melrose	A xxxxx	0.337	A xxxxx	0.337	+ 0.000 V/C
# 28 Crowther and Kraemer	A xxxxx	0.414	A xxxxx	0.414	+ 0.000 V/C
# 29 Orangethorpe and Placentia	A xxxxx	0.524	A xxxxx	0.524	+ 0.000 V/C
# 30 Orangethorpe and SR-57 SB Ramp	A xxxxx	0.496	A xxxxx	0.496	+ 0.000 V/C
# 31 Orangethorpe and SR-57 NB Ramp	D xxxxx	0.845	D xxxxx	0.845	+ 0.000 V/C
# 32 Orangethorpe and Melrose	B xxxxx	0.668	B xxxxx	0.668	+ 0.000 V/C
# 33 Orangethorpe and Kraemer	B xxxxx	0.602	B xxxxx	0.602	+ 0.000 V/C
# 34 Orangethorpe and Miller/Crowth	A xxxxx	0.355	A xxxxx	0.355	+ 0.000 V/C
# 35 Orangethorpe and Chapman	A xxxxx	0.312	A xxxxx	0.312	+ 0.000 V/C
# 36 Rose Drive and Del Cerro Dr	A xxxxx	0.447	A xxxxx	0.447	+ 0.000 V/C
# 37 Orangethorpe and Del Cerro Dr	A xxxxx	0.293	A xxxxx	0.293	+ 0.000 V/C
# 38 Orangethorpe and Jefferson	A xxxxx	0.470	A xxxxx	0.470	+ 0.000 V/C
# 39 Orangethorpe and Van Buren	A xxxxx	0.466	A xxxxx	0.466	+ 0.000 V/C
# 40 Orangethorpe and Richfield	A xxxxx	0.512	A xxxxx	0.512	+ 0.000 V/C
# 41 Van Buren and Miraloma	B 11.6	0.288	B 11.6	0.288	+ 0.000 V/C
# 42 Miraloma and Richfield	A xxxxx	0.262	A xxxxx	0.262	+ 0.000 V/C

Level Of Service Computation Report  
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*  
Intersection #1 Golden and Kraemer  
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.451  
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 22 Level Of Service: A  
\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			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	0	0	1	0	0	1	0

Volume Module:

Base Vol:	39	606	99	117	975	19	23	13	40	89	13	94
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:	39	606	99	117	975	19	23	13	40	89	13	94
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:	39	606	99	117	975	19	23	13	40	89	13	94
User 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
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	41	634	104	122	1020	20	24	14	42	93	14	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	634	104	122	1020	20	24	14	42	93	14	98
PCE 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
MLF 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
Final Volume:	41	634	104	122	1020	20	24	14	42	93	14	98

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	2.00	1.00	0.64	0.36	1.00	1.00	1.00	1.00
Final Sat.:	1700	3400	1700	1700	3400	1700	1086	614	1700	1700	1700	1700

Capacity Analysis Module:

Vol/Sat:	0.02	0.19	0.06	0.07	0.30	0.01	0.01	0.02	0.02	0.05	0.01	0.06
Crit Moves:	****			****			****		****			****

\*\*\*\*\*



Level Of Service Computation Report

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

Intersection #2 Golden and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.284
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.835
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #4 Placentia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.745
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #5 Kraemer and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.712
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #6 Valencia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.562
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #7 McCormac and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.398
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #8 Yorba Linda and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.650
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing traffic volumes and 10 rows of metrics including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 10 columns representing saturation flow and 4 rows of metrics including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 10 columns representing capacity analysis and 3 rows of metrics including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #9 Yorba Linda and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing traffic volumes and 10 rows of metrics including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 10 columns representing saturation flow and 4 rows of metrics including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 10 columns representing capacity analysis and 3 rows of metrics including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #10 Yorba Linda and Palm

Cycle (sec): 100 Critical Vol./Cap.(X): 0.498
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #11 Yorba Linda and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #12 Yorba Linda and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.749
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #13 Kraemer and Morse

Cycle (sec): 100 Critical Vol./Cap.(X): 0.493
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 Palm and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.528
Loss Time (sec): 5 Average Delay (sec/veh): 14.9
Optimal Cycle: 0 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for adjustment factors and 3 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for volume/saturation and 12 rows for delay, LOS, and other performance metrics.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 rows for adjustment factors like Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for adjustment factors and 3 rows for Sat/Lane, Adjustment, and Lanes.

Capacity Analysis Module table with 12 columns for volume/saturation and 12 rows for delay, LOS, and other performance metrics.

Level Of Service Computation Report

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

Intersection #16 Madison and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.494
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #17 Madison and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.549
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.



Level Of Service Computation Report

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

Intersection #18 Buena Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #19 Nutwood and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.539
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #20 Alta Vista and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.743
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #21 Alta Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.613
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Alta Vista and Jefferson
Cycle (sec): 100 Critical Vol./Cap.(X): 0.284
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 11 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #23 Chapman and Placentia
Cycle (sec): 100 Critical Vol./Cap.(X): 0.656
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 11 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #24 Chapman and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.616
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #26 Crowther and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.501
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves.

Level Of Service Computation Report

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

Intersection #27 Crowther and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.337
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves.

Level Of Service Computation Report

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

Intersection #28 Crowther and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.414
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic flows. Rows include 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 Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #29 Orangethorpe and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.524
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic flows. Rows include 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 Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #30 Orangethorpe and SR-57 SB Ramp/Iowa Pl

Cycle (sec): 100 Critical Vol./Cap.(X): 0.496
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.845
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 64 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and vehicle types.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level Of Service Computation Report

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

Intersection #33 Orangethorpe and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.602
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and vehicle types.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.



Level Of Service Computation Report

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

Intersection #34 Orangethorpe and Miller/Crowther

Cycle (sec): 100 Critical Vol./Cap.(X): 0.355
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #35 Orangethorpe and Chapman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.312
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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 Intersection #36 Rose Drive and Del Cerro Dr  
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Cycle (sec): 100 Critical Vol./Cap.(X): 0.447  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 22 Level of Service: A  
 \*\*\*\*\*

Street Name:	Rose Drive						Del Cerro Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			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:	0	0	2	1	0	2	0	0	0	0	1	0

Volume Module:

Base Vol:	0	1304	154	56	977	0	0	0	0	79	0	156
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:	0	1304	154	56	977	0	0	0	0	79	0	156
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:	0	1304	154	56	977	0	0	0	0	79	0	156
User 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
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1417	167	61	1062	0	0	0	0	86	0	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1417	167	61	1062	0	0	0	0	86	0	170
PCE 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
MLF 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
FinalVolume:	0	1417	167	61	1062	0	0	0	0	86	0	170

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:	0.00	2.68	0.32	1.00	2.00	0.00	0.00	0.00	0.00	1.01	0.00	1.99
Final Sat.:	0	4561	539	1700	3400	0	0	0	0	1714	0	3386

Capacity Analysis Module:

Vol/Sat:	0.00	0.31	0.31	0.04	0.31	0.00	0.00	0.00	0.00	0.05	0.00	0.05
Crit Moves:	****			****						****		

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Level of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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 Intersection #37 Orangethorpe and Del Cerro Dr  
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Cycle (sec): 100 Critical Vol./Cap.(X): 0.293  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 21 Level of Service: A  
 \*\*\*\*\*

Street Name:	Del Cerro Dr						Orangethorpe					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			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:	0	0	0	0	0	0	1	0	0	2	2	0

Volume Module:

Base Vol:	0	0	0	82	0	133	142	892	0	0	485	95
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:	0	0	0	82	0	133	142	892	0	0	485	95
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:	0	0	0	82	0	133	142	892	0	0	485	95
User 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
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	89	0	145	154	970	0	0	527	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	89	0	145	154	970	0	0	527	103
PCE 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
MLF 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
FinalVolume:	0	0	0	89	0	145	154	970	0	0	527	103

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:	0.00	0.00	0.00	1.00	0.00	2.00	2.00	3.00	0.00	0.00	2.51	0.49
Final Sat.:	0	0	0	1700	0	3400	3400	5100	0	0	4265	835

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.04	0.05	0.19	0.00	0.00	0.12	0.12
Crit Moves:				****				****				

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Level Of Service Computation Report

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

Intersection #38 Orangethorpe and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.470
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #39 Orangethorpe and Van Buren

Cycle (sec): 100 Critical Vol./Cap.(X): 0.466
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #40 Orangethorpe and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.512
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and Delay/Veh.

\*\*\*\*\*

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #41 Van Buren and Miraloma

Cycle (sec): 100 Critical Vol./Cap.(X): 0.288
Loss Time (sec): 5 Average Delay (sec/veh): 11.6
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and Delay/Veh.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Level Of Service Computation Report

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

\*\*\*\*\*
Intersection #42 Miraloma and Richfield
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.262
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 16 Level Of Service: A
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes.
























Volume Module: Table with 12 columns representing different volume categories and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns representing saturation flow for different lanes and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns representing capacity analysis and 3 rows of data including Vol/Sat, Crit Moves, and a summary row.

HCM 2010 Signalized Intersection Summary  
1: Kraemer & Golden

Existing AM  
07/11/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	4	12	183	13	170	22	501	82	113	661	9
Future Volume (veh/h)	8	4	12	183	13	170	22	501	82	113	661	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	9	5	14	208	15	193	25	569	93	128	751	10
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	393	182	435	600	533	453	553	2112	945	610	2112	907
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	769	637	1520	1388	1863	1583	702	3539	1583	770	3539	1520
Grp Volume(v), veh/h	14	0	14	208	15	193	25	569	93	128	751	10
Grp Sat Flow(s),veh/h/ln	1406	0	1520	1388	1863	1583	702	1770	1583	770	1770	1520
Q Serve(g_s), s	0.0	0.0	0.2	4.3	0.2	3.4	0.6	2.6	0.9	3.3	3.7	0.1
Cycle Q Clear(g_c), s	0.2	0.0	0.2	4.5	0.2	3.4	4.4	2.6	0.9	5.9	3.7	0.1
Prop In Lane	0.64		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	575	0	435	600	533	453	553	2112	945	610	2112	907
V/C Ratio(X)	0.02	0.00	0.03	0.35	0.03	0.43	0.05	0.27	0.10	0.21	0.36	0.01
Avail Cap(c_a), veh/h	1252	0	1198	1296	1468	1248	728	2996	1340	802	2996	1287
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.8	0.0	8.8	10.4	8.8	9.9	4.7	3.3	3.0	4.7	3.5	2.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.6	0.0	0.1	0.0	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	1.7	0.1	1.5	0.1	1.3	0.4	0.7	1.8	0.0
LnGrp Delay(d),s/veh	8.8	0.0	8.8	10.8	8.8	10.6	4.7	3.4	3.0	4.9	3.6	2.8
LnGrp LOS	A		A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		28			416			687			889	
Approach Delay, s/veh		8.8			10.6			3.4			3.8	
Approach LOS		A			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.4		11.8		22.4		11.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		6.4		2.2		7.9		6.5				
Green Ext Time (p_c), s		11.0		1.5		10.5		1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			5.1									
HCM 2010 LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	156	88	42	192	42	87	212	86	39	335	60
Future Volume (veh/h)	44	156	88	42	192	42	87	212	86	39	335	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	61	217	122	58	267	58	121	294	119	54	465	83
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	498	704	599	517	704	599	564	1252	496	634	1518	269
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1051	1863	1583	1037	1863	1583	856	2478	981	969	3005	533
Grp Volume(v), veh/h	61	217	122	58	267	58	121	208	205	54	273	275
Grp Sat Flow(s),veh/h/ln	1051	1863	1583	1037	1863	1583	856	1770	1690	969	1770	1769
Q Serve(g_s), s	1.5	2.8	1.8	1.4	3.6	0.8	3.3	2.3	2.3	1.1	3.1	3.1
Cycle Q Clear(g_c), s	5.1	2.8	1.8	4.2	3.6	0.8	6.4	2.3	2.3	3.5	3.1	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.58	1.00		0.30
Lane Grp Cap(c), veh/h	498	704	599	517	704	599	564	894	854	634	894	894
V/C Ratio(X)	0.12	0.31	0.20	0.11	0.38	0.10	0.21	0.23	0.24	0.09	0.31	0.31
Avail Cap(c_a), veh/h	929	1468	1248	942	1468	1248	856	1498	1430	964	1498	1497
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	7.5	7.2	9.0	7.7	6.9	6.9	4.8	4.8	5.8	5.0	5.0
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.5	0.8	0.4	1.8	0.4	0.8	1.1	1.1	0.3	1.5	1.5
LnGrp Delay(d),s/veh	9.7	7.7	7.3	9.1	8.1	6.9	7.0	4.9	4.9	5.8	5.1	5.2
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		400			383			534			602	
Approach Delay, s/veh		7.9			8.1			5.4			5.2	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.3		15.0		19.3		15.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		8.4		7.1		5.5		6.2				
Green Ext Time (p_c), s		6.9		3.9		7.3		3.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				6.4								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑↑		↔ ↑↑↑	↔ ↑↑	↔ ↑↑	↔ ↑↑	↔ ↑↑	↔ ↑↑	↔ ↑↑
Traffic Volume (veh/h)	29	1079	194	249	1318	563	224	175	148	747	476	24
Future Volume (veh/h)	29	1079	194	249	1318	563	224	175	148	747	476	24
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	1173	211	271	1433	612	243	190	161	812	517	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	1628	293	347	2184	680	386	702	314	811	1139	0
Arrive On Green	0.05	0.38	0.38	0.10	0.43	0.43	0.11	0.20	0.20	0.24	0.32	0.00
Sat Flow, veh/h	1774	4336	780	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	32	917	467	271	1433	612	243	190	161	812	517	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1725	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	1.6	20.7	20.7	6.9	20.0	32.1	6.0	4.1	8.1	21.0	10.3	0.0
Cycle Q Clear(g_c), s	1.6	20.7	20.7	6.9	20.0	32.1	6.0	4.1	8.1	21.0	10.3	0.0
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	83	1273	648	347	2184	680	386	702	314	811	1139	0
V/C Ratio(X)	0.38	0.72	0.72	0.78	0.66	0.90	0.63	0.27	0.51	1.00	0.45	0.00
Avail Cap(c_a), veh/h	159	1369	697	347	2184	680	386	1429	639	811	1866	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.2	23.8	23.8	39.1	20.2	23.7	37.8	30.3	31.9	34.1	24.0	0.0
Incr Delay (d2), s/veh	2.9	1.7	3.4	10.9	0.7	15.1	3.3	0.2	1.3	32.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.9	10.3	3.8	9.4	16.8	3.0	2.0	3.6	13.5	5.1	0.0
LnGrp Delay(d),s/veh	44.1	25.6	27.2	50.0	20.9	38.7	41.1	30.5	33.2	66.1	24.3	0.0
LnGrp LOS	D	C	C	D	C	D	D	C	C	F	C	
Approach Vol, veh/h		1416			2316			594			1329	
Approach Delay, s/veh		26.5			29.0			35.6			49.9	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	35.5	12.0	30.7	6.2	40.3	23.0	19.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	34.0	8.0	45.0	6.0	35.0	19.0	34.0					
Max Q Clear Time (g_c+10), s	22.7	8.0	12.3	3.6	34.1	23.0	10.1					
Green Ext Time (p_c), s	0.0	8.8	0.0	6.0	0.0	0.9	0.0	5.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				34.0								
HCM 2010 LOS				C								



HCM 2010 Signalized Intersection Summary  
4: Placentia & Bastanchury

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	658	174	296	726	81	120	207	151	163	405	24
Future Volume (veh/h)	46	658	174	296	726	81	120	207	151	163	405	24
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	52	739	196	333	816	91	135	233	170	183	455	27
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	1259	563	322	1663	744	392	499	350	413	851	50
Arrive On Green	0.07	0.36	0.36	0.18	0.47	0.47	0.09	0.25	0.25	0.09	0.25	0.25
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1992	1395	1774	3396	201
Grp Volume(v), veh/h	52	739	196	333	816	91	135	206	197	183	237	245
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1617	1774	1770	1827
Q Serve(g_s), s	1.9	11.2	6.0	12.0	10.5	2.1	3.6	6.5	6.9	5.0	7.6	7.7
Cycle Q Clear(g_c), s	1.9	11.2	6.0	12.0	10.5	2.1	3.6	6.5	6.9	5.0	7.6	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.11
Lane Grp Cap(c), veh/h	120	1259	563	322	1663	744	392	444	405	413	444	458
V/C Ratio(X)	0.43	0.59	0.35	1.03	0.49	0.12	0.34	0.46	0.49	0.44	0.53	0.54
Avail Cap(c_a), veh/h	161	1446	647	322	1768	791	392	723	661	413	723	747
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	17.3	15.6	27.0	12.1	9.8	16.0	21.0	21.1	16.4	21.4	21.4
Incr Delay (d2), s/veh	2.5	0.5	0.4	59.1	0.2	0.1	0.5	0.8	0.9	0.7	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.5	2.6	11.1	5.2	1.0	1.8	3.3	3.2	2.5	3.9	4.0
LnGrp Delay(d),s/veh	32.1	17.8	16.0	86.1	12.3	9.9	16.5	21.8	22.0	17.2	22.4	22.4
LnGrp LOS	C	B	B	F	B	A	B	C	C	B	C	C
Approach Vol, veh/h		987			1240			538			665	
Approach Delay, s/veh		18.2			31.9			20.5			21.0	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	25.5	8.0	18.6	6.5	33.0	8.0	18.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	25.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	11.0	13.2	5.6	9.7	3.9	12.5	7.0	8.9				
Green Ext Time (p_c), s	0.0	8.3	0.0	4.9	0.0	11.5	0.0	5.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				24.1								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
5: Kraemer & Bastanchury

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑↓		↔	↑↑↑		↔	↑↓		↔	↑↑↑	
Traffic Volume (veh/h)	202	644	175	126	751	66	162	487	149	61	706	192
Future Volume (veh/h)	202	644	175	126	751	66	162	487	149	61	706	192
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	232	740	201	145	863	76	186	560	171	70	811	221
Adj No. of Lanes	2	2	0	1	3	0	2	2	0	1	3	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	997	271	222	1774	156	264	897	273	133	1331	360
Arrive On Green	0.11	0.36	0.36	0.12	0.37	0.37	0.08	0.34	0.34	0.08	0.33	0.33
Sat Flow, veh/h	3442	2753	748	1774	4761	418	3442	2675	814	1774	3985	1078
Grp Volume(v), veh/h	232	476	465	145	614	325	186	370	361	70	689	343
Grp Sat Flow(s),veh/h/ln	1721	1770	1731	1774	1695	1789	1721	1770	1719	1774	1695	1673
Q Serve(g_s), s	5.0	18.3	18.3	6.1	10.8	10.9	4.1	13.7	13.8	3.0	13.3	13.4
Cycle Q Clear(g_c), s	5.0	18.3	18.3	6.1	10.8	10.9	4.1	13.7	13.8	3.0	13.3	13.4
Prop In Lane	1.00		0.43	1.00		0.23	1.00		0.47	1.00		0.64
Lane Grp Cap(c), veh/h	394	641	627	222	1263	666	264	594	577	133	1132	559
V/C Ratio(X)	0.59	0.74	0.74	0.65	0.49	0.49	0.70	0.62	0.63	0.52	0.61	0.61
Avail Cap(c_a), veh/h	396	679	664	249	1387	732	264	679	659	136	1300	641
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	21.8	21.8	32.6	18.8	18.8	35.3	21.8	21.9	34.8	21.8	21.8
Incr Delay (d2), s/veh	2.3	4.2	4.2	5.1	0.3	0.6	8.2	1.4	1.5	3.5	0.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	9.7	9.5	3.3	5.1	5.4	2.3	6.9	6.8	1.6	6.3	6.4
LnGrp Delay(d),s/veh	35.1	25.9	26.0	37.7	19.1	19.4	43.5	23.3	23.4	38.3	22.4	23.2
LnGrp LOS	D	C	C	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1173			1084			917			1102	
Approach Delay, s/veh		27.8			21.7			27.4			23.7	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.8	30.3	8.0	28.1	11.0	31.1	7.9	28.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	28.0	28.0	4.0	28.0	7.0	30.0	4.0	28.0				
Max Q Clear Time (g_c+1/3), s	20.3	6.1	15.4	7.0	12.9	5.0	15.8					
Green Ext Time (p_c), s	0.0	6.0	0.0	8.6	0.0	11.4	0.0	8.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				25.1								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
6: Valencia & Bastanchury

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	72	576	255	247	736	41	69	269	99	37	426	111
Future Volume (veh/h)	72	576	255	247	736	41	69	269	99	37	426	111
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	89	711	315	305	909	51	85	332	122	46	526	137
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	1213	543	382	1587	89	261	908	328	344	992	257
Arrive On Green	0.09	0.34	0.34	0.22	0.47	0.47	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	3407	191	769	2549	921	933	2783	722
Grp Volume(v), veh/h	89	711	315	305	472	488	85	229	225	46	334	329
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1829	769	1770	1700	933	1770	1735
Q Serve(g_s), s	3.3	11.5	11.4	11.4	13.6	13.6	6.9	6.7	6.9	2.7	10.4	10.5
Cycle Q Clear(g_c), s	3.3	11.5	11.4	11.4	13.6	13.6	17.4	6.7	6.9	9.5	10.4	10.5
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.54	1.00		0.42
Lane Grp Cap(c), veh/h	163	1213	543	382	824	852	261	630	606	344	630	618
V/C Ratio(X)	0.55	0.59	0.58	0.80	0.57	0.57	0.33	0.36	0.37	0.13	0.53	0.53
Avail Cap(c_a), veh/h	229	1370	613	382	837	865	285	685	658	373	685	672
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	18.9	18.8	25.9	13.6	13.6	24.8	16.6	16.7	20.2	17.8	17.8
Incr Delay (d2), s/veh	2.8	0.5	1.1	11.4	0.9	0.9	0.7	0.4	0.4	0.2	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.7	5.2	6.7	6.8	7.0	1.5	3.3	3.3	0.7	5.2	5.2
LnGrp Delay(d),s/veh	33.1	19.4	19.9	37.4	14.5	14.5	25.5	16.9	17.0	20.4	18.5	18.6
LnGrp LOS	C	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1115			1265			539			709	
Approach Delay, s/veh		20.6			20.0			18.3			18.6	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	25.9		26.9	8.4	34.5		26.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	3.0	25.0		25.0	7.0	31.0		25.0				
Max Q Clear Time (g_c+1), s	13.4	13.5		12.5	5.3	15.6		19.4				
Green Ext Time (p_c), s	0.0	8.4		6.2	0.0	10.5		3.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
7: McCormac & Bastanchury

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	663	29	28	870	25	35	27	69	41	25	15
Future Volume (veh/h)	9	663	29	28	870	25	35	27	69	41	25	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	819	36	35	1074	31	43	33	85	51	31	19
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	466	2238	98	561	2276	66	214	97	195	311	151	70
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	508	3454	152	643	3513	101	333	417	839	642	649	299
Grp Volume(v), veh/h	11	420	435	35	541	564	161	0	0	101	0	0
Grp Sat Flow(s),veh/h/ln	508	1770	1836	643	1770	1845	1588	0	0	1590	0	0
Q Serve(g_s), s	0.4	3.7	3.7	0.9	5.2	5.2	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.6	3.7	3.7	4.6	5.2	5.2	2.8	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.05	0.27		0.53	0.50		0.19
Lane Grp Cap(c), veh/h	466	1147	1190	561	1147	1195	506	0	0	532	0	0
V/C Ratio(X)	0.02	0.37	0.37	0.06	0.47	0.47	0.32	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	547	1428	1482	664	1428	1489	1495	0	0	1462	0	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.4	2.7	2.7	3.8	3.0	3.0	10.9	0.0	0.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.0	0.3	0.3	0.4	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.9	0.2	2.5	2.6	1.3	0.0	0.0	0.8	0.0	0.0	0.0
LnGrp Delay(d),s/veh	4.4	2.9	2.9	3.8	3.3	3.3	11.3	0.0	0.0	10.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		866			1140			161			101	
Approach Delay, s/veh		2.9			3.3			11.3			10.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.8		23.7		9.8		23.7				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		4.8		7.6		3.5		7.2				
Green Ext Time (p_c), s		1.5		12.1		1.6		12.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				4.0								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
8: Bradford & Yorba Linda

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑↑ ↗			↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	19	805	47	191	1236	68	161	50	233	94	66	25
Future Volume (veh/h)	19	805	47	191	1236	68	161	50	233	94	66	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	947	55	225	1454	80	189	59	274	111	78	29
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1973	114	330	2611	144	463	561	477	424	390	145
Arrive On Green	0.06	0.40	0.40	0.19	0.53	0.53	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	4918	285	1774	4934	271	1281	1863	1583	1043	1296	482
Grp Volume(v), veh/h	22	652	350	225	999	535	189	59	274	111	0	107
Grp Sat Flow(s),veh/h/ln	1774	1695	1812	1774	1695	1815	1281	1863	1583	1043	0	1778
Q Serve(g_s), s	0.6	7.7	7.7	6.4	10.6	10.6	6.9	1.2	7.9	4.6	0.0	2.4
Cycle Q Clear(g_c), s	0.6	7.7	7.7	6.4	10.6	10.6	9.3	1.2	7.9	5.9	0.0	2.4
Prop In Lane	1.00		0.16	1.00		0.15	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	103	1361	727	330	1794	960	463	561	477	424	0	536
V/C Ratio(X)	0.21	0.48	0.48	0.68	0.56	0.56	0.41	0.11	0.57	0.26	0.00	0.20
Avail Cap(c_a), veh/h	198	1512	808	330	1794	960	791	1039	883	691	0	991
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	11.9	11.9	20.4	8.5	8.5	17.4	13.6	15.9	15.7	0.0	14.0
Incr Delay (d2), s/veh	1.0	0.3	0.5	5.7	0.4	0.7	0.6	0.1	1.1	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.6	3.9	3.6	5.0	5.4	2.5	0.6	3.5	1.4	0.0	1.2
LnGrp Delay(d),s/veh	25.2	12.2	12.4	26.1	8.8	9.2	18.0	13.6	17.0	16.0	0.0	14.2
LnGrp LOS	C	B	B	C	A	A	B	B	B	B		B
Approach Vol, veh/h		1024			1759			522			218	
Approach Delay, s/veh		12.6			11.1			17.0			15.1	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	2.0	23.6		18.2	5.1	30.5		18.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	22.0		28.0	4.0	26.0		28.0				
Max Q Clear Time (g_c+1), s	9.7	9.7		7.9	2.6	12.6		11.3				
Green Ext Time (p_c), s	0.0	9.9		3.0	0.0	11.5		2.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.7								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗ ↘		↖ ↗	↖ ↗ ↘		↖ ↗	↖ ↗	↖	↖ ↗ ↘	↖ ↗ ↘	↖
Traffic Volume (veh/h)	214	799	139	194	1093	131	208	375	164	166	720	230
Future Volume (veh/h)	214	799	139	194	1093	131	208	375	164	166	720	230
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	252	940	164	228	1286	154	245	441	193	195	847	271
Adj No. of Lanes	2	3	0	1	3	0	2	2	1	1	3	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	1696	295	219	1810	217	255	984	440	197	1601	499
Arrive On Green	0.12	0.39	0.39	0.12	0.39	0.39	0.07	0.28	0.28	0.11	0.31	0.31
Sat Flow, veh/h	3442	4361	758	1774	4604	551	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	252	730	374	228	947	493	245	441	193	195	847	271
Grp Sat Flow(s),veh/h/ln	1721	1695	1729	1774	1695	1765	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	5.6	13.6	13.7	10.0	19.1	19.1	5.7	8.3	8.1	8.9	11.1	11.5
Cycle Q Clear(g_c), s	5.6	13.6	13.7	10.0	19.1	19.1	5.7	8.3	8.1	8.9	11.1	11.5
Prop In Lane	1.00		0.44	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	410	1318	672	219	1333	694	255	984	440	197	1601	499
V/C Ratio(X)	0.61	0.55	0.56	1.04	0.71	0.71	0.96	0.45	0.44	0.99	0.53	0.54
Avail Cap(c_a), veh/h	425	1381	704	219	1381	719	255	1311	586	197	2071	645
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	19.3	19.3	35.5	20.7	20.7	37.4	24.1	24.1	36.0	22.8	22.9
Incr Delay (d2), s/veh	2.5	0.4	0.9	72.0	1.7	3.1	45.5	0.3	0.7	60.9	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	6.4	6.7	9.2	9.1	9.8	4.3	4.1	3.6	7.7	5.2	5.1
LnGrp Delay(d),s/veh	36.4	19.7	20.2	107.5	22.4	23.8	82.9	24.4	24.7	96.9	23.1	23.9
LnGrp LOS	D	B	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1356			1668			879			1313	
Approach Delay, s/veh		23.0			34.4			40.8			34.2	
Approach LOS		C			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.0	33.5	8.0	27.5	11.6	33.9	11.0	24.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	31.0	4.0	31.0	8.0	31.0	7.0	28.0				
Max Q Clear Time (g_c+11.2), s	11.2	15.7	7.7	13.5	7.6	21.1	10.9	10.3				
Green Ext Time (p_c), s	0.0	13.0	0.0	10.1	0.0	8.8	0.0	10.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				32.5								
HCM 2010 LOS				C								

HCM Signalized Intersection Capacity Analysis  
10: Palm & Yorba Linda

Existing AM  
07/11/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	888	233	71	1175	253	38
Future Volume (vph)	888	233	71	1175	253	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0		2.0	2.0	2.0	
Lane Util. Factor	0.91		1.00	0.95	0.97	
Frt	0.97		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	4927		1770	3539	3395	
Flt Permitted	1.00		0.17	1.00	0.96	
Satd. Flow (perm)	4927		309	3539	3395	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1110	291	89	1469	316	48
RTOR Reduction (vph)	73	0	0	0	31	0
Lane Group Flow (vph)	1328	0	89	1469	333	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	6	
Permitted Phases			8		6	
Actuated Green, G (s)	22.1		22.1	22.1	9.0	
Effective Green, g (s)	24.1		24.1	24.1	11.0	
Actuated g/C Ratio	0.62		0.62	0.62	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3036		190	2181	955	
v/s Ratio Prot	0.27			c0.42	c0.10	
v/s Ratio Perm			0.29			
v/c Ratio	0.44		0.47	0.67	0.35	
Uniform Delay, d1	3.9		4.0	4.9	11.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1		1.8	0.8	0.2	
Delay (s)	4.0		5.9	5.8	11.4	
Level of Service	A		A	A	B	
Approach Delay (s)	4.0			5.8	11.4	
Approach LOS	A			A	B	

Intersection Summary

HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	4.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 11: Valencia & Yorba Linda

Existing AM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	617	29	38	756	150	46	300	59	138	326	367
Future Volume (veh/h)	235	617	29	38	756	150	46	300	59	138	326	367
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	305	801	38	49	982	195	60	390	77	179	423	477
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1471	658	115	1336	574	220	1273	249	423	763	682
Arrive On Green	0.10	0.42	0.42	0.06	0.38	0.38	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	616	2953	578	922	1770	1583
Grp Volume(v), veh/h	305	801	38	49	982	195	60	232	235	179	423	477
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	616	1770	1761	922	1770	1583
Q Serve(g_s), s	7.0	11.6	1.0	1.8	16.2	6.2	6.0	5.8	5.9	10.7	12.1	16.7
Cycle Q Clear(g_c), s	7.0	11.6	1.0	1.8	16.2	6.2	22.6	5.8	5.9	16.7	12.1	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	183	1471	658	115	1336	574	220	763	759	423	763	682
V/C Ratio(X)	1.67	0.54	0.06	0.43	0.73	0.34	0.27	0.30	0.31	0.42	0.55	0.70
Avail Cap(c_a), veh/h	183	1471	658	157	1407	604	227	782	778	433	782	699
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	15.0	11.9	30.5	18.2	15.1	24.9	12.7	12.7	18.2	14.4	15.7
Incr Delay (d2), s/veh	323.4	0.4	0.0	2.5	1.9	0.3	0.7	0.2	0.2	0.7	0.8	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	5.8	0.4	1.0	8.3	2.7	1.1	2.9	2.9	2.8	6.0	7.7
LnGrp Delay(d),s/veh	353.8	15.4	11.9	33.0	20.1	15.4	25.6	12.9	12.9	18.8	15.3	18.7
LnGrp LOS	F	B	B	C	C	B	C	B	B	B	B	B
Approach Vol, veh/h		1144			1226			527			1079	
Approach Delay, s/veh		105.5			19.9			14.3			17.4	
Approach LOS		F			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	30.2		31.3	9.0	27.6		31.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	26.0		28.0	5.0	25.0		28.0				
Max Q Clear Time (g_c+1/3), s	4.0	13.6		18.7	9.0	18.2		24.6				
Green Ext Time (p_c), s	0.0	9.3		6.4	0.0	5.4		2.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				43.1								
HCM 2010 LOS				D								



HCM 2010 Signalized Intersection Summary  
 12: Rose & Yorba Linda

Existing AM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	536	51	260	671	151	92	475	142	132	820	91
Future Volume (veh/h)	92	536	51	260	671	151	92	475	142	132	820	91
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1788	1863	1863	1863
Adj Flow Rate, veh/h	107	623	59	302	780	176	107	552	165	153	953	106
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	1096	471	316	1369	588	135	1183	508	135	1183	529
Arrive On Green	0.10	0.31	0.31	0.18	0.39	0.39	0.08	0.33	0.33	0.08	0.33	0.33
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3539	1520	1774	3539	1583
Grp Volume(v), veh/h	107	623	59	302	780	176	107	552	165	153	953	106
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1770	1520	1774	1770	1583
Q Serve(g_s), s	4.5	11.6	2.2	13.3	13.6	6.3	4.7	9.7	6.4	6.0	19.3	3.8
Cycle Q Clear(g_c), s	4.5	11.6	2.2	13.3	13.6	6.3	4.7	9.7	6.4	6.0	19.3	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	1096	471	316	1369	588	135	1183	508	135	1183	529
V/C Ratio(X)	0.60	0.57	0.13	0.96	0.57	0.30	0.79	0.47	0.32	1.13	0.81	0.20
Avail Cap(c_a), veh/h	226	1350	580	316	1530	657	135	1215	522	135	1215	543
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	22.7	19.5	32.0	19.0	16.7	35.7	20.7	19.6	36.3	23.9	18.7
Incr Delay (d2), s/veh	3.2	0.5	0.1	39.0	0.4	0.3	26.4	0.3	0.4	116.8	4.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.7	0.9	9.9	6.7	2.7	3.3	4.7	2.7	7.3	10.1	1.7
LnGrp Delay(d),s/veh	37.0	23.2	19.6	71.1	19.4	17.0	62.1	20.9	19.9	153.1	27.8	18.9
LnGrp LOS	D	C	B	E	B	B	E	C	B	F	C	B
Approach Vol, veh/h		789			1258			824			1212	
Approach Delay, s/veh		24.8			31.4			26.1			42.9	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	26.4	8.0	28.3	9.9	32.4	8.0	28.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	2.0	28.0	4.0	25.0	8.0	32.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	11.3	13.6	6.7	21.3	6.5	15.6	8.0	11.7				
Green Ext Time (p_c), s	0.0	8.8	0.0	3.0	0.0	9.6	0.0	8.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				32.5								
HCM 2010 LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	24	46	11	244	21	113	3	658	177	46	1049	13
Future Volume (veh/h)	24	46	11	244	21	113	3	658	177	46	1049	13
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	30	58	14	309	27	143	4	833	224	58	1328	16
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	116	767	112	0	767	65	1224	547	130	1353	605
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.04	0.35	0.35	0.07	0.38	0.38
Sat Flow, veh/h	0	240	1583	0	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	88	0	14	336	0	143	4	833	224	58	1328	16
Grp Sat Flow(s),veh/h/ln	240	0	1583	0	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.3	0.0	0.0	3.2	0.1	12.5	6.7	1.9	23.0	0.4
Cycle Q Clear(g_c), s	30.0	0.0	0.3	30.0	0.0	3.2	0.1	12.5	6.7	1.9	23.0	0.4
Prop In Lane	0.34		1.00	0.92		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	0	767	112	0	767	65	1224	547	130	1353	605
V/C Ratio(X)	0.45	0.00	0.02	3.01	0.00	0.19	0.06	0.68	0.41	0.45	0.98	0.03
Avail Cap(c_a), veh/h	194	0	767	112	0	767	172	1314	588	172	1353	605
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	8.3	31.0	0.0	9.1	28.8	17.3	15.4	27.5	18.9	11.9
Incr Delay (d2), s/veh	1.7	0.0	0.0	928.7	0.0	0.1	0.4	1.3	0.5	2.4	20.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.1	30.7	0.0	1.4	0.1	6.2	3.0	1.0	14.8	0.2
LnGrp Delay(d),s/veh	15.8	0.0	8.3	959.7	0.0	9.2	29.2	18.7	15.9	29.9	39.1	12.0
LnGrp LOS	B		A	F		A	C	B	B	C	D	B
Approach Vol, veh/h		102			479			1061			1402	
Approach Delay, s/veh		14.8			675.9			18.1			38.4	
Approach LOS		B			F			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	4.3	25.7		32.0	6.5	23.4				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		32.0	2.1	25.0		32.0	3.9	14.5				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	4.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			130.8									
HCM 2010 LOS			F									

**Intersection**

Intersection Delay, s/veh 16.2  
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕				↕		↘	↕	↘
Traffic Vol, veh/h	66	379	17	23	280	133	0	5	36	17	217	34	51
Future Vol, veh/h	66	379	17	23	280	133	0	5	36	17	217	34	51
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	416	19	25	308	146	0	5	40	19	238	37	56
Number of Lanes	1	2	0	1	2	0	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	3	3
HCM Control Delay	16.7	16	12.6	16.6
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	9%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	62%	0%	100%	88%	0%	100%	41%	0%	100%	0%
Vol Right, %	29%	0%	0%	12%	0%	0%	59%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	66	253	143	23	187	226	217	34	51
LT Vol	5	66	0	0	23	0	0	217	0	0
Through Vol	36	0	253	126	0	187	93	0	34	0
RT Vol	17	0	0	17	0	0	133	0	0	51
Lane Flow Rate	64	73	278	158	25	205	249	238	37	56
Geometry Grp	8	8	8	8	8	8	8	7	7	7
Degree of Util (X)	0.148	0.16	0.573	0.322	0.056	0.429	0.491	0.523	0.077	0.104
Departure Headway (Hd)	8.354	7.945	7.435	7.351	8.033	7.523	7.103	7.901	7.396	6.689
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	429	451	486	488	446	478	507	458	485	536
Service Time	6.115	5.693	5.183	5.098	5.78	5.27	4.85	5.644	5.138	4.431
HCM Lane V/C Ratio	0.149	0.162	0.572	0.324	0.056	0.429	0.491	0.52	0.076	0.104
HCM Control Delay	12.6	12.2	19.7	13.6	11.3	15.8	16.6	19	10.8	10.2
HCM Lane LOS	B	B	C	B	B	C	C	C	B	B
HCM 95th-tile Q	0.5	0.6	3.5	1.4	0.2	2.1	2.7	3	0.2	0.3

HCM 2010 Signalized Intersection Summary  
15: Rose & Palm

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	2	566	14	11	9	316	758	7	4	1203	53
Future Volume (veh/h)	53	2	566	14	11	9	316	758	7	4	1203	53
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	60	2	643	16	12	10	359	861	8	5	1367	60
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	551	645	906	263	180	526	401	1959	841	51	1262	542
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.23	0.55	0.55	0.03	0.36	0.36
Sat Flow, veh/h	1384	1863	1583	564	519	1520	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	60	2	643	28	0	10	359	861	8	5	1367	60
Grp Sat Flow(s),veh/h/ln	1384	1863	1583	1083	0	1520	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	2.5	0.1	24.6	0.0	0.0	0.4	16.5	12.1	0.2	0.2	30.0	2.2
Cycle Q Clear(g_c), s	3.4	0.1	24.6	0.8	0.0	0.4	16.5	12.1	0.2	0.2	30.0	2.2
Prop In Lane	1.00		1.00	0.57		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	551	645	906	442	0	526	401	1959	841	51	1262	542
V/C Ratio(X)	0.11	0.00	0.71	0.06	0.00	0.02	0.90	0.44	0.01	0.10	1.08	0.11
Avail Cap(c_a), veh/h	565	664	922	453	0	542	401	1959	841	127	1262	542
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	18.0	13.0	18.3	0.0	18.1	31.6	11.1	8.4	39.8	27.1	18.1
Incr Delay (d2), s/veh	0.1	0.0	2.5	0.1	0.0	0.0	22.0	0.2	0.0	0.8	51.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	11.2	0.4	0.0	0.2	10.5	5.9	0.1	0.1	23.5	0.9
LnGrp Delay(d),s/veh	19.5	18.0	15.5	18.3	0.0	18.1	53.6	11.2	8.4	40.6	78.1	18.2
LnGrp LOS	B	B	B	B		B	D	B	A	D	F	B
Approach Vol, veh/h		705			38			1228			1432	
Approach Delay, s/veh		15.8			18.3			23.6			75.5	
Approach LOS		B			B			C			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.1	21.0	32.0		31.1	4.4	48.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		26.6	18.5	32.0		2.8	2.2	14.1				
Green Ext Time (p_c), s		0.5	0.0	0.0		3.1	0.0	19.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			43.8									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary  
16: Bradford & Madison

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	91	70	257	138	64	63	265	200	79	312	83
Future Volume (veh/h)	76	91	70	257	138	64	63	265	200	79	312	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	104	125	96	352	189	88	86	363	274	108	427	114
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	524	342	279	610	484	411	482	694	590	500	706	576
Arrive On Green	0.10	0.18	0.18	0.18	0.26	0.26	0.10	0.37	0.37	0.10	0.38	0.38
Sat Flow, veh/h	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Grp Volume(v), veh/h	104	125	96	352	189	88	86	363	274	108	427	114
Grp Sat Flow(s),veh/h/ln	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Q Serve(g_s), s	2.2	2.9	2.7	7.3	4.2	2.2	1.3	7.6	6.5	1.7	9.2	2.5
Cycle Q Clear(g_c), s	2.2	2.9	2.7	7.3	4.2	2.2	1.3	7.6	6.5	1.7	9.2	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	524	342	279	610	484	411	482	694	590	500	706	576
V/C Ratio(X)	0.20	0.37	0.34	0.58	0.39	0.21	0.18	0.52	0.46	0.22	0.60	0.20
Avail Cap(c_a), veh/h	552	898	733	610	1010	858	526	1047	890	532	1047	855
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	17.8	17.7	11.4	15.2	14.4	8.3	12.2	11.9	7.9	12.5	10.4
Incr Delay (d2), s/veh	0.2	0.7	0.7	1.4	0.5	0.3	0.2	0.6	0.6	0.2	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.6	1.2	3.7	2.2	1.0	0.7	3.9	2.9	0.8	4.8	1.1
LnGrp Delay(d),s/veh	13.6	18.4	18.4	12.7	15.7	14.7	8.4	12.8	12.4	8.1	13.3	10.6
LnGrp LOS	B	B	B	B	B	B	A	B	B	A	B	B
Approach Vol, veh/h		325			629			723			649	
Approach Delay, s/veh		16.9			13.9			12.1			11.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	20.6	11.0	11.1	6.8	20.9	7.2	14.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	7.0	22.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1/3), s	4.0	9.6	9.3	4.9	3.3	11.2	4.2	6.2				
Green Ext Time (p_c), s	0.0	6.0	0.0	2.2	0.0	5.7	0.0	2.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
17: Kraemer & Madison

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	15	287	15	92	55	240	670	4	17	1136	197
Future Volume (veh/h)	110	15	287	15	92	55	240	670	4	17	1136	197
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1900	1863	1863	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	147	20	383	20	123	73	320	893	5	23	1515	263
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	465	644	525	111	563	547	311	1766	759	422	1604	689
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.10	0.50	0.50	0.05	0.45	0.45
Sat Flow, veh/h	1182	1863	1520	122	1630	1583	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	147	20	383	143	0	73	320	893	5	23	1515	263
Grp Sat Flow(s),veh/h/ln	1182	1863	1520	1752	0	1583	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	6.0	0.4	13.1	0.0	0.0	1.9	6.0	10.1	0.1	0.4	24.4	6.8
Cycle Q Clear(g_c), s	9.2	0.4	13.1	3.2	0.0	1.9	6.0	10.1	0.1	0.4	24.4	6.8
Prop In Lane	1.00		1.00	0.14		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	465	644	525	674	0	547	311	1766	759	422	1604	689
V/C Ratio(X)	0.32	0.03	0.73	0.21	0.00	0.13	1.03	0.51	0.01	0.05	0.94	0.38
Avail Cap(c_a), veh/h	1862	2845	2321	2628	0	2418	311	1766	759	503	1604	689
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	12.9	17.1	13.8	0.0	13.4	15.0	10.0	7.5	7.8	15.6	10.8
Incr Delay (d2), s/veh	0.4	0.0	2.0	0.2	0.0	0.1	58.5	0.2	0.0	0.1	11.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.2	5.7	1.7	0.0	0.8	10.1	4.9	0.0	0.2	14.4	2.9
LnGrp Delay(d),s/veh	17.5	12.9	19.0	14.0	0.0	13.5	73.5	10.2	7.5	7.8	27.4	11.1
LnGrp LOS	B	B	B	B		B	F	B	A	A	C	B
Approach Vol, veh/h		550			216			1218			1801	
Approach Delay, s/veh		18.4			13.8			26.9			24.8	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.6	8.0	29.0		22.6	5.3	31.7				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		89.0	4.0	25.0		89.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s		15.1	8.0	26.4		5.2	2.4	12.1				
Green Ext Time (p_c), s		3.4	0.0	0.0		3.4	0.0	11.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.9									
HCM 2010 LOS			C									



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	315	240	835	168	139	1676		
Future Volume (veh/h)	315	240	835	168	139	1676		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1788	1863	1863		
Adj Flow Rate, veh/h	366	279	971	195	162	1949		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	493	440	1700	730	262	2334		
Arrive On Green	0.28	0.28	0.48	0.48	0.15	0.66		
Sat Flow, veh/h	1774	1583	3632	1520	1774	3632		
Grp Volume(v), veh/h	366	279	971	195	162	1949		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1520	1774	1770		
Q Serve(g_s), s	12.0	9.8	12.5	4.9	5.5	26.6		
Cycle Q Clear(g_c), s	12.0	9.8	12.5	4.9	5.5	26.6		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	493	440	1700	730	262	2334		
V/C Ratio(X)	0.74	0.63	0.57	0.27	0.62	0.84		
Avail Cap(c_a), veh/h	752	671	1700	730	752	2722		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	20.9	20.2	11.8	9.9	25.5	8.2		
Incr Delay (d2), s/veh	2.2	1.5	0.5	0.2	2.4	2.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.1	8.6	6.2	2.0	2.8	13.4		
LnGrp Delay(d),s/veh	23.2	21.7	12.3	10.1	27.9	10.3		
LnGrp LOS	C	C	B	B	C	B		
Approach Vol, veh/h	645		1166			2111		
Approach Delay, s/veh	22.5		11.9			11.7		
Approach LOS	C		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.0		19.7	11.4	32.6
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				47.0		25.0	25.0	18.0
Max Q Clear Time (g_c+11), s				28.6		14.0	7.5	14.5
Green Ext Time (p_c), s				11.4		1.7	0.4	3.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			13.5					
HCM 2010 LOS			B					

# HCM Signalized Intersection Capacity Analysis

## 19: Placentia & Nutwood

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖		↖	↕		↖	↕	
Traffic Volume (vph)	123	18	96	73	165	5	116	339	68	3	660	558
Future Volume (vph)	123	18	96	73	165	5	116	339	68	3	660	558
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	0.93	
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1706	1583	1770	1854		1770	3451		1770	3296	
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.14	1.00		0.47	1.00	
Satd. Flow (perm)	1681	1706	1583	1770	1854		264	3451		882	3296	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	138	20	108	82	185	6	130	381	76	3	742	627
RTOR Reduction (vph)	0	0	93	0	3	0	0	30	0	0	249	0
Lane Group Flow (vph)	79	79	15	82	188	0	130	427	0	3	1120	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	5	5		1	1			8				4
Permitted Phases			5				8			4		
Actuated Green, G (s)	4.4	4.4	4.4	4.2	4.2		26.2	26.2		26.2	26.2	
Effective Green, g (s)	6.4	6.4	6.4	6.2	6.2		28.2	28.2		28.2	28.2	
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13		0.60	0.60		0.60	0.60	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	229	233	216	234	245		159	2079		531	1986	
v/s Ratio Prot	c0.05	0.05		0.05	c0.10			0.12			0.34	
v/s Ratio Perm			0.01				c0.49			0.00		
v/c Ratio	0.34	0.34	0.07	0.35	0.77		0.82	0.21		0.01	0.56	
Uniform Delay, d1	18.3	18.3	17.6	18.5	19.6		7.3	4.2		3.7	5.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.9	0.1	0.9	13.5		26.7	0.0		0.0	0.4	
Delay (s)	19.2	19.2	17.7	19.4	33.1		33.9	4.3		3.7	6.0	
Level of Service	B	B	B	B	C		C	A		A	A	
Approach Delay (s)		18.6			29.0			10.8			6.0	
Approach LOS		B			C			B			A	

### Intersection Summary

HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	46.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



HCM 2010 Signalized Intersection Summary  
20: Kraemer & Alta Vista

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	199	39	155	154	326	23	480	97	232	1061	133
Future Volume (veh/h)	115	199	39	155	154	326	23	480	97	232	1061	133
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	142	246	48	191	190	402	28	593	120	286	1310	164
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	578	113	377	711	604	88	1490	667	210	1733	744
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.05	0.42	0.42	0.12	0.49	0.49
Sat Flow, veh/h	821	1515	296	1081	1863	1583	1774	3539	1583	1774	3539	1520
Grp Volume(v), veh/h	142	0	294	191	190	402	28	593	120	286	1310	164
Grp Sat Flow(s),veh/h/ln	821	0	1811	1081	1863	1583	1774	1770	1583	1774	1770	1520
Q Serve(g_s), s	10.9	0.0	9.1	12.0	5.3	16.0	1.2	8.9	3.6	9.0	22.8	4.7
Cycle Q Clear(g_c), s	16.3	0.0	9.1	21.2	5.3	16.0	1.2	8.9	3.6	9.0	22.8	4.7
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	0	691	377	711	604	88	1490	667	210	1733	744
V/C Ratio(X)	0.41	0.00	0.43	0.51	0.27	0.67	0.32	0.40	0.18	1.36	0.76	0.22
Avail Cap(c_a), veh/h	394	0	786	434	809	687	140	1723	771	210	1863	800
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	17.4	25.2	16.2	19.5	34.9	15.3	13.8	33.5	15.7	11.1
Incr Delay (d2), s/veh	0.8	0.0	0.4	1.1	0.2	2.0	2.0	0.2	0.1	190.3	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	4.7	3.7	2.8	7.3	0.6	4.3	1.6	15.5	11.5	2.0
LnGrp Delay(d),s/veh	22.5	0.0	17.8	26.2	16.4	21.5	36.9	15.5	13.9	223.8	17.4	11.2
LnGrp LOS	C		B	C	B	C	D	B	B	F	B	B
Approach Vol, veh/h		436			783			741			1760	
Approach Delay, s/veh		19.3			21.4			16.0			50.4	
Approach LOS		B			C			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.0	5.8	39.2		31.0	11.0	34.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		31.0	4.0	38.0		31.0	7.0	35.0				
Max Q Clear Time (g_c+I1), s		18.3	3.2	24.8		23.2	11.0	10.9				
Green Ext Time (p_c), s		5.2	0.0	10.4		3.8	0.0	16.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			33.8									
HCM 2010 LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	271	241	235	111	275	125	86	580	10	115	1406	311
Future Volume (veh/h)	271	241	235	111	275	125	86	580	10	115	1406	311
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	311	277	270	128	316	144	99	667	11	132	1616	357
Adj No. of Lanes	1	2	0	1	2	0	2	3	0	2	3	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	570	510	212	660	294	276	1800	30	309	1824	568
Arrive On Green	0.16	0.32	0.32	0.12	0.28	0.28	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	1774	1770	1583	1774	2382	1063	3442	5153	85	3442	5085	1583
Grp Volume(v), veh/h	311	277	270	128	233	227	99	438	240	132	1616	357
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1675	1721	1695	1848	1721	1695	1583
Q Serve(g_s), s	11.0	8.4	9.3	4.6	7.3	7.6	1.8	6.5	6.5	2.4	20.0	12.5
Cycle Q Clear(g_c), s	11.0	8.4	9.3	4.6	7.3	7.6	1.8	6.5	6.5	2.4	20.0	12.5
Prop In Lane	1.00		1.00	1.00		0.63	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	292	570	510	212	490	464	276	1184	645	309	1824	568
V/C Ratio(X)	1.07	0.49	0.53	0.60	0.48	0.49	0.36	0.37	0.37	0.43	0.89	0.63
Avail Cap(c_a), veh/h	292	1005	899	239	952	902	309	1216	663	309	1824	568
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	18.2	18.5	28.0	20.1	20.2	29.1	16.3	16.3	28.8	20.2	17.8
Incr Delay (d2), s/veh	71.3	0.6	0.9	3.5	0.7	0.8	0.8	0.2	0.4	0.9	5.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.2	4.2	2.4	3.7	3.6	0.9	3.0	3.3	1.2	10.2	5.8
LnGrp Delay(d),s/veh	99.2	18.9	19.4	31.4	20.9	21.0	29.9	16.5	16.6	29.8	25.8	20.0
LnGrp LOS	F	B	B	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		858			588			777			2105	
Approach Delay, s/veh		48.2			23.2			18.2			25.1	
Approach LOS		D			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	23.5	7.4	26.0	13.0	20.5	8.0	25.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	36.0	4.0	22.0	9.0	34.0	4.0	22.0				
Max Q Clear Time (g_c+10), s	11.0	11.3	3.8	22.0	13.0	9.6	4.4	8.5				
Green Ext Time (p_c), s	0.0	7.0	0.0	0.0	0.0	7.0	0.0	11.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				28.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
 22: Jefferson & Alta Vista

Existing AM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	22	230	132	50	292	5	98	10	36	5	35	50
Future Volume (veh/h)	22	230	132	50	292	5	98	10	36	5	35	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	28	295	169	64	374	6	126	13	46	6	45	64
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	896	500	216	1555	25	545	501	426	594	476	426
Arrive On Green	0.09	0.41	0.41	0.12	0.44	0.44	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	2192	1224	1774	3565	57	1279	1863	1583	1338	1770	1583
Grp Volume(v), veh/h	28	237	227	64	185	195	126	13	46	6	45	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1647	1774	1770	1853	1279	1863	1583	1338	1770	1583
Q Serve(g_s), s	0.4	2.7	2.8	1.0	2.0	2.0	2.5	0.2	0.7	0.1	0.6	0.9
Cycle Q Clear(g_c), s	0.4	2.7	2.8	1.0	2.0	2.0	3.4	0.2	0.7	0.3	0.6	0.9
Prop In Lane	1.00		0.74	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	723	673	216	772	808	545	501	426	594	476	426
V/C Ratio(X)	0.17	0.33	0.34	0.30	0.24	0.24	0.23	0.03	0.11	0.01	0.09	0.15
Avail Cap(c_a), veh/h	355	1772	1649	415	1831	1917	1354	1679	1427	1440	1595	1427
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	6.0	6.1	12.0	5.3	5.3	9.6	8.1	8.2	8.2	8.2	8.3
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.8	0.2	0.2	0.2	0.0	0.1	0.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	1.3	0.5	1.0	1.0	0.9	0.1	0.3	0.0	0.3	0.4
LnGrp Delay(d),s/veh	12.9	6.3	6.4	12.7	5.5	5.5	9.9	8.1	8.4	8.2	8.3	8.5
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		492			444			185			115	
Approach Delay, s/veh		6.7			6.5			9.4			8.4	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	14.2		10.1	4.8	15.1		10.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	28.0		25.0	4.0	29.0		25.0				
Max Q Clear Time (g_c+1), s	5.0	4.8		2.9	2.4	4.0		5.4				
Green Ext Time (p_c), s	0.0	5.4		1.2	0.0	5.5		1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.2								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
 23: Placentia & Chapman

Existing AM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↔	↔	↑↑	↔	↔↔	↑↑		↔	↑↑	
Traffic Volume (veh/h)	141	502	161	87	666	69	265	297	92	101	530	157
Future Volume (veh/h)	141	502	161	87	666	69	265	297	92	101	530	157
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	150	534	171	93	709	73	282	316	98	107	564	167
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	1197	740	168	1194	534	444	929	283	186	872	257
Arrive On Green	0.10	0.34	0.34	0.09	0.34	0.34	0.13	0.35	0.35	0.10	0.32	0.32
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	3442	2673	815	1774	2696	796
Grp Volume(v), veh/h	150	534	171	93	709	73	282	207	207	107	370	361
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1721	1770	1719	1774	1770	1722
Q Serve(g_s), s	2.9	8.2	4.5	3.5	11.6	2.2	5.4	6.0	6.2	4.0	12.5	12.5
Cycle Q Clear(g_c), s	2.9	8.2	4.5	3.5	11.6	2.2	5.4	6.0	6.2	4.0	12.5	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		0.46
Lane Grp Cap(c), veh/h	328	1197	740	168	1194	534	444	615	597	186	572	557
V/C Ratio(X)	0.46	0.45	0.23	0.55	0.59	0.14	0.63	0.34	0.35	0.57	0.65	0.65
Avail Cap(c_a), veh/h	395	1472	863	229	1522	681	444	685	665	305	761	741
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	18.0	11.1	30.2	19.1	16.0	28.8	16.8	16.9	29.7	20.2	20.2
Incr Delay (d2), s/veh	1.0	0.3	0.2	2.8	0.5	0.1	3.0	0.3	0.3	2.8	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.0	2.0	1.8	5.7	1.0	2.8	3.0	3.0	2.1	6.3	6.1
LnGrp Delay(d),s/veh	30.8	18.3	11.3	33.0	19.6	16.2	31.8	17.1	17.2	32.5	21.4	21.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		855			875			696			838	
Approach Delay, s/veh		19.1			20.8			23.1			22.9	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	25.6	11.0	24.6	8.7	25.5	9.3	26.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	27.0	7.0	28.0	6.0	28.0	10.0	25.0				
Max Q Clear Time (g_c+15), s	5.5	10.2	7.4	14.5	4.9	13.6	6.0	8.2				
Green Ext Time (p_c), s	0.0	8.7	0.0	6.0	0.0	8.0	0.1	6.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				21.3								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
24: Bradford & Chapman

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	200	439	17	78	704	178	19	273	46	86	196	201
Future Volume (veh/h)	200	439	17	78	704	178	19	273	46	86	196	201
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	247	542	21	96	869	220	23	337	57	106	242	248
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	1683	65	179	1096	277	312	960	161	345	589	501
Arrive On Green	0.19	0.48	0.48	0.10	0.39	0.39	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	3474	134	1774	2799	708	903	3035	508	986	1863	1583
Grp Volume(v), veh/h	247	276	287	96	549	540	23	195	199	106	242	248
Grp Sat Flow(s),veh/h/ln	1774	1770	1839	1774	1770	1738	903	1770	1773	986	1863	1583
Q Serve(g_s), s	7.9	5.8	5.8	3.1	16.7	16.7	1.2	5.2	5.3	5.6	6.2	7.7
Cycle Q Clear(g_c), s	7.9	5.8	5.8	3.1	16.7	16.7	7.5	5.2	5.3	10.9	6.2	7.7
Prop In Lane	1.00		0.07	1.00		0.41	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	344	857	891	179	693	680	312	560	561	345	589	501
V/C Ratio(X)	0.72	0.32	0.32	0.54	0.79	0.79	0.07	0.35	0.35	0.31	0.41	0.50
Avail Cap(c_a), veh/h	350	857	891	233	727	714	427	785	787	471	827	703
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	9.6	9.6	26.0	16.3	16.3	19.3	16.0	16.0	20.2	16.3	16.9
Incr Delay (d2), s/veh	6.8	0.2	0.2	2.5	5.8	5.9	0.1	0.4	0.4	0.5	0.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	2.9	3.0	1.6	9.2	9.1	0.3	2.6	2.6	1.6	3.2	3.5
LnGrp Delay(d),s/veh	29.8	9.8	9.8	28.5	22.1	22.3	19.4	16.4	16.4	20.7	16.8	17.6
LnGrp LOS	C	A	A	C	C	C	B	B	B	C	B	B
Approach Vol, veh/h		810			1185			417			596	
Approach Delay, s/veh		15.9			22.7			16.5			17.8	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	31.5		21.2	13.8	25.8		21.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	27.0		25.0	10.0	23.0		25.0				
Max Q Clear Time (g_c+15), s	6.0	7.8		12.9	9.9	18.7		9.5				
Green Ext Time (p_c), s	0.0	10.9		4.3	0.0	3.1		4.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
25: Kraemer & Chapman

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	311	267	174	504	64	205	350	120	48	962	178
Future Volume (veh/h)	149	311	267	174	504	64	205	350	120	48	962	178
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	166	346	297	193	560	71	228	389	133	53	1069	198
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	1113	478	195	1064	457	170	1525	499	114	1598	296
Arrive On Green	0.12	0.31	0.31	0.11	0.30	0.30	0.10	0.40	0.40	0.06	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3793	1241	1774	4314	798
Grp Volume(v), veh/h	166	346	297	193	560	71	228	346	176	53	840	427
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1644	1774	1695	1722
Q Serve(g_s), s	6.6	5.4	12.1	7.9	9.6	2.5	7.0	5.0	5.2	2.1	15.1	15.2
Cycle Q Clear(g_c), s	6.6	5.4	12.1	7.9	9.6	2.5	7.0	5.0	5.2	2.1	15.1	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.75	1.00		0.46
Lane Grp Cap(c), veh/h	219	1113	478	195	1064	457	170	1363	661	114	1256	638
V/C Ratio(X)	0.76	0.31	0.62	0.99	0.53	0.16	1.34	0.25	0.27	0.46	0.67	0.67
Avail Cap(c_a), veh/h	219	1552	667	195	1504	646	170	1440	698	146	1394	708
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	19.0	21.3	32.5	21.2	18.7	33.0	14.5	14.6	32.9	19.2	19.2
Incr Delay (d2), s/veh	14.2	0.2	1.3	62.2	0.4	0.2	186.9	0.1	0.2	2.9	1.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.7	5.2	7.2	4.7	1.1	12.2	2.3	2.4	1.1	7.2	7.5
LnGrp Delay(d),s/veh	45.1	19.2	22.6	94.6	21.6	18.9	219.9	14.6	14.8	35.8	20.3	21.4
LnGrp LOS	D	B	C	F	C	B	F	B	B	D	C	C
Approach Vol, veh/h		809			824			750			1320	
Approach Delay, s/veh		25.8			38.5			77.1			21.3	
Approach LOS		C			D			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	24.9	9.0	29.0	11.0	23.9	6.7	31.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+19), s	14.1	14.1	9.0	17.2	8.6	11.6	4.1	7.2				
Green Ext Time (p_c), s	0.0	6.8	0.0	7.9	0.0	7.1	0.0	13.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					37.4							
HCM 2010 LOS					D							

HCM 2010 Signalized Intersection Summary  
26: Placentia & Crowther

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↖↗		↖	↖↗	↖
Traffic Volume (veh/h)	59	18	25	134	51	121	26	452	49	155	598	70
Future Volume (veh/h)	59	18	25	134	51	121	26	452	49	155	598	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	70	21	30	160	61	144	31	538	58	185	712	83
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	189	270	525	507	431	548	2009	216	637	2205	987
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1172	695	993	1348	1863	1583	680	3224	347	818	3539	1583
Grp Volume(v), veh/h	70	0	51	160	61	144	31	295	301	185	712	83
Grp Sat Flow(s),veh/h/ln	1172	0	1688	1348	1863	1583	680	1770	1802	818	1770	1583
Q Serve(g_s), s	1.8	0.0	0.9	3.9	0.9	2.8	0.9	2.9	2.9	5.0	3.6	0.8
Cycle Q Clear(g_c), s	2.8	0.0	0.9	4.7	0.9	2.8	4.5	2.9	2.9	7.9	3.6	0.8
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	479	0	459	525	507	431	548	1103	1123	637	2205	987
V/C Ratio(X)	0.15	0.00	0.11	0.30	0.12	0.33	0.06	0.27	0.27	0.29	0.32	0.08
Avail Cap(c_a), veh/h	928	0	1106	1041	1220	1037	766	1669	1700	899	3339	1494
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	10.4	12.2	10.5	11.1	4.5	3.3	3.3	5.1	3.4	2.9
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.3	0.1	0.5	0.0	0.1	0.1	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.4	1.5	0.5	1.3	0.2	1.4	1.5	1.2	1.7	0.4
LnGrp Delay(d),s/veh	11.6	0.0	10.5	12.5	10.6	11.6	4.5	3.4	3.4	5.3	3.5	2.9
LnGrp LOS	B		B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		121			365			627			980	
Approach Delay, s/veh		11.2			11.8			3.4			3.8	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.8		12.4		25.8		12.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		6.5		4.8		9.9		6.7				
Green Ext Time (p_c), s		12.7		1.8		11.8		1.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				5.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
27: Melrose & Crowther

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	93	112	57	195	15	55	331	48	24	443	62
Future Volume (veh/h)	6	93	112	57	195	15	55	331	48	24	443	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	7	107	129	66	224	17	63	380	55	28	509	71
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	420	357	179	502	427	176	1247	179	134	1180	164
Arrive On Green	0.06	0.23	0.23	0.10	0.27	0.27	0.10	0.40	0.40	0.08	0.38	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3107	446	1774	3122	434
Grp Volume(v), veh/h	7	107	129	66	224	17	63	215	220	28	288	292
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1784	1774	1770	1786
Q Serve(g_s), s	0.2	1.9	2.8	1.4	4.1	0.3	1.4	3.4	3.4	0.6	4.9	5.0
Cycle Q Clear(g_c), s	0.2	1.9	2.8	1.4	4.1	0.3	1.4	3.4	3.4	0.6	4.9	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.24
Lane Grp Cap(c), veh/h	100	420	357	179	502	427	176	710	716	134	669	675
V/C Ratio(X)	0.07	0.25	0.36	0.37	0.45	0.04	0.36	0.30	0.31	0.21	0.43	0.43
Avail Cap(c_a), veh/h	261	1373	1167	261	1373	1167	261	1304	1315	261	1304	1316
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	13.0	13.3	17.1	12.3	11.0	17.1	8.3	8.3	17.7	9.4	9.4
Incr Delay (d2), s/veh	0.3	0.3	0.6	1.3	0.6	0.0	1.2	0.2	0.2	0.8	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.0	1.3	0.8	2.1	0.1	0.7	1.7	1.7	0.3	2.5	2.5
LnGrp Delay(d),s/veh	18.5	13.3	13.9	18.4	13.0	11.0	18.3	8.5	8.6	18.4	9.8	9.9
LnGrp LOS	B	B	B	B	B	B	B	A	A	B	A	A
Approach Vol, veh/h		243			307			498			608	
Approach Delay, s/veh		13.8			14.0			9.8			10.2	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	11.2	6.0	17.4	4.3	13.0	5.1	18.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	28.0	4.0	28.0	4.0	28.0				
Max Q Clear Time (g_c+1), s	4.0	4.8	3.4	7.0	2.2	6.1	2.6	5.4				
Green Ext Time (p_c), s	0.0	2.4	0.0	6.4	0.0	2.4	0.0	6.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				11.3								
HCM 2010 LOS				B								





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑↑↑		↖	↑↑	↗
Traffic Volume (veh/h)	23	53	46	0	95	44	57	577	3	119	1206	128
Future Volume (veh/h)	23	53	46	0	95	44	57	577	3	119	1206	128
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	26	60	52	0	108	50	65	656	3	135	1370	145
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	501	425	4	297	252	162	2440	11	242	1814	812
Arrive On Green	0.07	0.27	0.27	0.00	0.16	0.16	0.09	0.47	0.47	0.14	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5225	24	1774	3539	1583
Grp Volume(v), veh/h	26	60	52	0	108	50	65	426	233	135	1370	145
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1859	1774	1770	1583
Q Serve(g_s), s	0.7	1.1	1.2	0.0	2.4	1.3	1.6	3.6	3.6	3.3	14.5	2.3
Cycle Q Clear(g_c), s	0.7	1.1	1.2	0.0	2.4	1.3	1.6	3.6	3.6	3.3	14.5	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	119	501	425	4	297	252	162	1584	868	242	1814	812
V/C Ratio(X)	0.22	0.12	0.12	0.00	0.36	0.20	0.40	0.27	0.27	0.56	0.76	0.18
Avail Cap(c_a), veh/h	226	1188	1010	226	1188	1010	226	1729	948	264	1881	841
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	13.0	13.0	0.0	17.7	17.2	20.2	7.6	7.6	19.0	9.1	6.2
Incr Delay (d2), s/veh	0.9	0.1	0.1	0.0	0.7	0.4	1.6	0.1	0.2	2.2	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	0.5	0.0	1.3	0.6	0.9	1.7	1.9	1.8	7.3	1.0
LnGrp Delay(d),s/veh	21.7	13.1	13.1	0.0	18.4	17.6	21.8	7.7	7.8	21.1	10.8	6.3
LnGrp LOS	C	B	B		B	B	C	A	A	C	B	A
Approach Vol, veh/h		138			158			724			1650	
Approach Delay, s/veh		14.7			18.1			9.0			11.3	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	14.6	6.3	26.1	5.2	9.5	8.4	24.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	23.0	4.0	28.0	5.0	22.0				
Max Q Clear Time (g_c+10), s	4.0	3.2	3.6	16.5	2.7	4.4	5.3	5.6				
Green Ext Time (p_c), s	0.0	1.2	0.0	5.6	0.0	1.2	0.0	12.6				

Intersection Summary

HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary  
29: Placentia & Orangethorpe

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘	↗ ↘		↔ ↗ ↘	↗ ↘	↗	↗	↗ ↘	↗	↗ ↘	↗ ↘	
Traffic Volume (veh/h)	175	512	33	89	546	193	37	275	99	148	320	229
Future Volume (veh/h)	175	512	33	89	546	193	37	275	99	148	320	229
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	194	569	37	99	607	0	41	306	110	164	356	254
Adj No. of Lanes	1	3	0	1	3	1	1	2	1	2	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1757	113	185	1516	472	120	1020	456	375	655	460
Arrive On Green	0.17	0.36	0.36	0.10	0.30	0.00	0.07	0.29	0.29	0.11	0.33	0.33
Sat Flow, veh/h	1774	4882	315	1774	5085	1583	1774	3539	1583	3442	1990	1396
Grp Volume(v), veh/h	194	394	212	99	607	0	41	306	110	164	316	294
Grp Sat Flow(s),veh/h/ln	1774	1695	1807	1774	1695	1583	1774	1770	1583	1721	1770	1616
Q Serve(g_s), s	5.9	4.9	4.9	3.1	5.5	0.0	1.3	3.9	3.1	2.6	8.4	8.6
Cycle Q Clear(g_c), s	5.9	4.9	4.9	3.1	5.5	0.0	1.3	3.9	3.1	2.6	8.4	8.6
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	295	1220	651	185	1516	472	120	1020	456	375	583	533
V/C Ratio(X)	0.66	0.32	0.33	0.53	0.40	0.00	0.34	0.30	0.24	0.44	0.54	0.55
Avail Cap(c_a), veh/h	337	1757	937	245	2372	738	184	1895	848	476	1009	921
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	13.4	13.4	24.6	16.2	0.0	25.7	16.0	15.8	24.1	15.8	15.9
Incr Delay (d2), s/veh	3.8	0.2	0.3	2.4	0.2	0.0	1.7	0.2	0.3	0.8	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	2.3	2.5	1.6	2.6	0.0	0.7	1.9	1.4	1.3	4.3	4.0
LnGrp Delay(d),s/veh	26.4	13.6	13.7	27.0	16.4	0.0	27.4	16.2	16.0	24.9	16.6	16.8
LnGrp LOS	C	B	B	C	B		C	B	B	C	B	B
Approach Vol, veh/h		800			706			457			774	
Approach Delay, s/veh		16.7			17.9			17.2			18.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	22.8	5.9	21.1	11.6	19.3	8.3	18.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	28.0	4.0	31.0	9.0	25.0	6.0	29.0				
Max Q Clear Time (g_c+15), s	6.0	6.9	3.3	10.6	7.9	7.5	4.6	5.9				
Green Ext Time (p_c), s	0.0	8.5	0.0	6.4	0.1	7.7	0.1	6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				17.6								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis  
30: SR57 SB Ramp & Orangethorpe

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕↔		↖	↕↕↕	↗		↕	↗	↖	↔	
Traffic Volume (vph)	124	698	2	11	804	419	3	9	33	264	0	152
Future Volume (vph)	124	698	2	11	804	419	3	9	33	264	0	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	9	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.99	
Satd. Flow (prot)	3433	5083		1770	5085	1583		1719	1425	1681	1549	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.99	
Satd. Flow (perm)	3433	5083		1770	5085	1583		1719	1425	1681	1549	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	759	2	12	874	455	3	10	36	287	0	165
RTOR Reduction (vph)	0	0	0	0	0	236	0	0	34	0	116	0
Lane Group Flow (vph)	135	761	0	12	874	219	0	13	2	235	101	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	3.0	24.8		0.5	22.3	22.3		2.0	2.0	15.6	15.6	
Effective Green, g (s)	5.0	26.8		2.5	24.3	24.3		4.0	4.0	17.6	17.6	
Actuated g/C Ratio	0.08	0.46		0.04	0.41	0.41		0.07	0.07	0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	291	2312		75	2097	653		116	96	502	462	
v/s Ratio Prot	c0.04	0.15		0.01	c0.17			c0.01		c0.14	0.07	
v/s Ratio Perm						0.14			0.00			
v/c Ratio	0.46	0.33		0.16	0.42	0.34		0.11	0.03	0.47	0.22	
Uniform Delay, d1	25.7	10.3		27.2	12.3	11.8		25.8	25.6	16.8	15.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.1		1.0	0.1	0.3		0.4	0.1	0.7	0.2	
Delay (s)	26.8	10.4		28.2	12.4	12.1		26.2	25.7	17.5	15.7	
Level of Service	C	B		C	B	B		C	C	B	B	
Approach Delay (s)		12.9			12.4			25.9			16.7	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe

Existing AM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑			↑↑↑		↔↔		↑			
Traffic Volume (veh/h)	138	860	0	0	975	218	242	0	536	0	0	0
Future Volume (veh/h)	138	860	0	0	975	218	242	0	536	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	150	935	0	0	1060	237	263	0	583			
Adj No. of Lanes	2	3	0	0	3	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	346	2507	0	0	1494	334	1514	0	697			
Arrive On Green	0.10	0.49	0.00	0.00	0.36	0.36	0.44	0.00	0.44			
Sat Flow, veh/h	3442	5253	0	0	4327	929	3442	0	1583			
Grp Volume(v), veh/h	150	935	0	0	864	433	263	0	583			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1699	1721	0	1583			
Q Serve(g_s), s	2.5	6.8	0.0	0.0	13.1	13.1	2.8	0.0	19.5			
Cycle Q Clear(g_c), s	2.5	6.8	0.0	0.0	13.1	13.1	2.8	0.0	19.5			
Prop In Lane	1.00		0.00	0.00		0.55	1.00		1.00			
Lane Grp Cap(c), veh/h	346	2507	0	0	1218	610	1514	0	697			
V/C Ratio(X)	0.43	0.37	0.00	0.00	0.71	0.71	0.17	0.00	0.84			
Avail Cap(c_a), veh/h	346	2553	0	0	1248	625	2073	0	954			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.3	9.4	0.0	0.0	16.5	16.5	10.1	0.0	14.8			
Incr Delay (d2), s/veh	0.9	0.1	0.0	0.0	1.8	3.6	0.1	0.0	4.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	3.1	0.0	0.0	6.4	6.8	1.3	0.0	9.4			
LnGrp Delay(d),s/veh	26.1	9.5	0.0	0.0	18.3	20.1	10.2	0.0	19.7			
LnGrp LOS	C	A			B	C	B		B			
Approach Vol, veh/h		1085			1297			846				
Approach Delay, s/veh		11.8			18.9			16.7				
Approach LOS		B			B			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		31.5			8.0	23.5		28.3				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+11), s		8.8			4.5	15.1		21.5				
Green Ext Time (p_c), s		14.5			0.0	4.4		2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					16.0							
HCM 2010 LOS					B							

HCM 2010 Signalized Intersection Summary  
32: Melrose & Orangethorpe

























Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	160	629	367	74	714	45	165	306	54	56	393	161
Future Volume (veh/h)	160	629	367	74	714	45	165	306	54	56	393	161
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	180	707	412	83	802	51	185	344	61	63	442	181
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	1196	558	268	1659	105	270	1124	197	132	728	295
Arrive On Green	0.09	0.35	0.35	0.08	0.34	0.34	0.15	0.37	0.37	0.07	0.30	0.30
Sat Flow, veh/h	3442	3390	1583	3442	4889	310	1774	3011	529	1774	2458	998
Grp Volume(v), veh/h	180	707	412	83	555	298	185	201	204	63	317	306
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1808	1774	1770	1769	1774	1770	1687
Q Serve(g_s), s	3.3	11.2	15.0	1.5	8.5	8.6	6.5	5.3	5.4	2.2	10.1	10.3
Cycle Q Clear(g_c), s	3.3	11.2	15.0	1.5	8.5	8.6	6.5	5.3	5.4	2.2	10.1	10.3
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.30	1.00		0.59
Lane Grp Cap(c), veh/h	314	1196	558	268	1151	614	270	661	661	132	524	499
V/C Ratio(X)	0.57	0.59	0.74	0.31	0.48	0.49	0.69	0.30	0.31	0.48	0.61	0.61
Avail Cap(c_a), veh/h	314	1236	577	314	1236	659	270	833	833	162	726	692
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	17.4	18.6	28.7	17.2	17.2	26.4	14.6	14.6	29.2	19.9	19.9
Incr Delay (d2), s/veh	2.5	0.7	4.8	0.7	0.3	0.6	7.1	0.3	0.3	2.7	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.3	7.3	0.7	4.0	4.3	3.7	2.6	2.7	1.2	5.1	4.9
LnGrp Delay(d),s/veh	31.2	18.1	23.4	29.3	17.5	17.8	33.5	14.8	14.9	31.9	21.0	21.2
LnGrp LOS	C	B	C	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		1299			936			590			686	
Approach Delay, s/veh		21.6			18.6			20.7			22.1	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	25.2	12.0	21.5	8.0	24.3	6.9	26.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+13), s	4.0	17.0	8.5	12.3	5.3	10.6	4.2	7.4				
Green Ext Time (p_c), s	0.0	4.2	0.0	5.2	0.0	8.7	0.0	6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				20.8								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
33: Kraemer & Orangethorpe

Existing AM  
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	328	255	132	399	44	154	461	48	38	1012	212
Future Volume (veh/h)	147	328	255	132	399	44	154	461	48	38	1012	212
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	165	369	287	148	448	49	173	518	54	43	1137	238
Adj No. of Lanes	1	2	1	1	3	0	1	2	1	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	965	432	224	1416	153	232	1600	716	96	1328	594
Arrive On Green	0.10	0.27	0.27	0.13	0.30	0.30	0.13	0.45	0.45	0.05	0.38	0.38
Sat Flow, veh/h	1774	3539	1583	1774	4662	502	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	165	369	287	148	324	173	173	518	54	43	1137	238
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1774	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.8	7.1	13.5	6.7	6.2	6.3	7.9	7.9	1.6	2.0	24.9	9.3
Cycle Q Clear(g_c), s	7.8	7.1	13.5	6.7	6.2	6.3	7.9	7.9	1.6	2.0	24.9	9.3
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	965	432	224	1029	539	232	1600	716	96	1328	594
V/C Ratio(X)	0.98	0.38	0.66	0.66	0.31	0.32	0.75	0.32	0.08	0.45	0.86	0.40
Avail Cap(c_a), veh/h	169	1263	565	380	1613	844	232	1600	716	169	1389	621
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	24.8	27.2	35.0	22.5	22.6	35.2	14.8	13.1	38.6	24.2	19.3
Incr Delay (d2), s/veh	62.4	0.2	1.9	3.3	0.2	0.3	12.3	0.1	0.0	3.3	5.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	3.5	6.1	3.5	2.9	3.1	4.6	3.8	0.7	1.1	13.1	4.1
LnGrp Delay(d),s/veh	100.4	25.1	29.0	38.3	22.7	22.9	47.5	14.9	13.1	41.8	29.5	19.8
LnGrp LOS	F	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		821			645			745			1418	
Approach Delay, s/veh		41.6			26.4			22.3			28.2	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	24.9	13.0	33.6	10.0	27.5	6.5	40.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	28.0	9.0	31.0	6.0	38.0	6.0	34.0				
Max Q Clear Time (g_c+I1), s	8.7	15.5	9.9	26.9	9.8	8.3	4.0	9.9				
Green Ext Time (p_c), s	0.2	5.4	0.0	2.7	0.0	7.7	0.0	14.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			29.7									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis  
34: Miller/Crowther & Orangethorpe

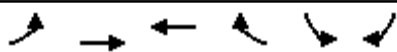
Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↖↗		↖	↗↖↗	↖	↖	↗	↖	↖	↗	↖
Traffic Volume (vph)	1	305	118	96	463	78	23	25	21	23	131	2
Future Volume (vph)	1	305	118	96	463	78	23	25	21	23	131	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	9	12	12	12	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4872		1770	4746	1425	1681	1762	1583	1681	1768	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	4872		1770	4746	1425	1681	1762	1583	1681	1768	1583
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	1	372	144	117	565	95	28	30	26	28	160	2
RTOR Reduction (vph)	0	77	0	0	0	51	0	0	24	0	0	2
Lane Group Flow (vph)	1	439	0	117	565	44	25	33	2	25	163	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		7	7	
Permitted Phases						6			3			7
Actuated Green, G (s)	0.6	14.6		4.9	18.9	18.9	1.9	1.9	1.9	7.3	7.3	7.3
Effective Green, g (s)	2.6	16.6		6.9	20.9	20.9	3.9	3.9	3.9	9.3	9.3	9.3
Actuated g/C Ratio	0.06	0.37		0.15	0.47	0.47	0.09	0.09	0.09	0.21	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Lane Grp Cap (vph)	102	1809		273	2219	666	146	153	138	349	367	329
v/s Ratio Prot	0.00	c0.09		c0.07	c0.12		0.01	c0.02		0.01	c0.09	
v/s Ratio Perm						0.03			0.00			0.00
v/c Ratio	0.01	0.24		0.43	0.25	0.07	0.17	0.22	0.02	0.07	0.44	0.00
Uniform Delay, d1	19.8	9.7		17.1	7.2	6.5	18.9	19.0	18.6	14.2	15.4	14.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		1.1	0.1	0.0	0.6	0.7	0.0	0.1	0.9	0.0
Delay (s)	19.9	9.8		18.2	7.3	6.6	19.5	19.7	18.7	14.3	16.3	14.0
Level of Service	B	A		B	A	A	B	B	B	B	B	B
Approach Delay (s)		9.8			8.8			19.3			16.0	
Approach LOS		A			A			B			B	

Intersection Summary

HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↵	↑↑↑	↑↑↑		↵	↵		
Traffic Volume (veh/h)	26	332	546	324	286	86		
Future Volume (veh/h)	26	332	546	324	286	86		
Number	5	2	6	16	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	31	400	658	390	345	104		
Adj No. of Lanes	1	3	3	0	2	1		
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	147	3355	1773	828	802	369		
Arrive On Green	0.08	0.66	0.52	0.52	0.23	0.23		
Sat Flow, veh/h	1774	5253	3558	1583	3442	1583		
Grp Volume(v), veh/h	31	400	658	390	345	104		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1721	1583		
Q Serve(g_s), s	0.6	1.1	4.3	5.8	3.2	2.0		
Cycle Q Clear(g_c), s	0.6	1.1	4.3	5.8	3.2	2.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	147	3355	1773	828	802	369		
V/C Ratio(X)	0.21	0.12	0.37	0.47	0.43	0.28		
Avail Cap(c_a), veh/h	286	4911	2547	1189	2770	1274		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.9	2.3	5.3	5.6	12.2	11.7		
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.4	0.4	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	0.5	2.0	2.6	1.5	0.9		
LnGrp Delay(d),s/veh	16.6	2.4	5.4	6.0	12.6	12.2		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		431	1048		449			
Approach Delay, s/veh		3.4	5.6		12.5			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		26.6			5.1	21.5		10.7
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		34.0			4.0	26.0		28.0
Max Q Clear Time (g_c+I1), s		3.1			2.6	7.8		5.2
Green Ext Time (p_c), s		12.7			0.0	9.7		1.6
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			6.7					
HCM 2010 LOS			A					



HCM Signalized Intersection Capacity Analysis  
 36: Del Cerro Drive & Rose

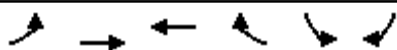
Existing AM  
 07/11/2018



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶↷	↶	↶↶	↶	↶	↶↶
Traffic Volume (vph)	187	83	504	49	69	1646
Future Volume (vph)	187	83	504	49	69	1646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.99	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3427	1441	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3427	1441	3539	1583	1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	90	548	53	75	1789
RTOR Reduction (vph)	5	72	0	16	0	0
Lane Group Flow (vph)	207	9	548	37	75	1789
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	3.7	3.7	35.0	35.0	2.1	41.1
Effective Green, g (s)	5.7	5.7	37.0	37.0	4.1	43.1
Actuated g/C Ratio	0.11	0.11	0.70	0.70	0.08	0.82
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	369	155	2479	1109	137	2888
v/s Ratio Prot	c0.06		0.15		0.04	c0.51
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.56	0.06	0.22	0.03	0.55	0.62
Uniform Delay, d1	22.4	21.1	2.8	2.4	23.5	1.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.0	0.0	4.4	0.4
Delay (s)	24.3	21.3	2.8	2.4	27.9	2.2
Level of Service	C	C	A	A	C	A
Approach Delay (s)	23.5		2.8			3.2
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖ ↗	↑ ↑ ↑	↑ ↑ ↗		↖	↗ ↘		
Traffic Volume (veh/h)	108	477	772	149	58	77		
Future Volume (veh/h)	108	477	772	149	58	77		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	117	518	839	162	63	84		
Adj No. of Lanes	2	3	3	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	460	3648	2259	434	301	473		
Arrive On Green	0.13	0.72	0.53	0.53	0.17	0.17		
Sat Flow, veh/h	3442	5253	4453	822	1774	2787		
Grp Volume(v), veh/h	117	518	663	338	63	84		
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1718	1774	1393		
Q Serve(g_s), s	1.1	1.1	4.1	4.1	1.1	0.9		
Cycle Q Clear(g_c), s	1.1	1.1	4.1	4.1	1.1	0.9		
Prop In Lane	1.00			0.48	1.00	1.00		
Lane Grp Cap(c), veh/h	460	3648	1787	905	301	473		
V/C Ratio(X)	0.25	0.14	0.37	0.37	0.21	0.18		
Avail Cap(c_a), veh/h	681	5317	2683	1359	1955	3071		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.7	1.6	4.9	4.9	12.7	12.6		
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.3	0.3	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.5	1.9	1.9	0.6	0.8		
LnGrp Delay(d),s/veh	14.0	1.6	5.0	5.2	13.0	12.8		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		635	1001		147			
Approach Delay, s/veh		3.9	5.1		12.9			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				27.4		8.0	6.7	20.7
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				35.0		37.0	5.0	26.0
Max Q Clear Time (g_c+I1), s				3.1		3.1	3.1	6.1
Green Ext Time (p_c), s				13.3		0.5	0.1	10.5
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			5.3					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary  
38: Jefferson & Orangethorpe

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	17	495	37	36	804	56	19	49	25	60	127	98
Future Volume (veh/h)	17	495	37	36	804	56	19	49	25	60	127	98
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	20	569	43	41	924	64	22	56	29	69	146	113
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	1577	119	145	1730	743	119	382	185	173	364	309
Arrive On Green	0.07	0.47	0.47	0.08	0.49	0.49	0.07	0.16	0.16	0.10	0.20	0.20
Sat Flow, veh/h	1774	3336	252	1774	3539	1520	1774	2316	1119	1774	1863	1583
Grp Volume(v), veh/h	20	301	311	41	924	64	22	42	43	69	146	113
Grp Sat Flow(s),veh/h/ln	1774	1770	1818	1774	1770	1520	1774	1770	1665	1774	1863	1583
Q Serve(g_s), s	0.5	4.7	4.7	0.9	7.9	1.0	0.5	0.9	1.0	1.6	3.0	2.7
Cycle Q Clear(g_c), s	0.5	4.7	4.7	0.9	7.9	1.0	0.5	0.9	1.0	1.6	3.0	2.7
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	116	836	860	145	1730	743	119	292	275	173	364	309
V/C Ratio(X)	0.17	0.36	0.36	0.28	0.53	0.09	0.18	0.14	0.16	0.40	0.40	0.37
Avail Cap(c_a), veh/h	244	1133	1165	244	2267	974	244	1093	1029	244	1151	978
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	7.3	7.3	18.9	7.7	6.0	19.3	15.6	15.6	18.5	15.4	15.2
Incr Delay (d2), s/veh	0.7	0.3	0.3	1.1	0.3	0.0	0.7	0.2	0.3	1.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	2.4	0.5	3.8	0.4	0.3	0.4	0.5	0.9	1.6	1.2
LnGrp Delay(d),s/veh	20.0	7.6	7.6	19.9	8.0	6.0	20.0	15.8	15.9	20.0	16.1	16.0
LnGrp LOS	C	A	A	B	A	A	B	B	B	B	B	B
Approach Vol, veh/h		632			1029			107			328	
Approach Delay, s/veh		8.0			8.3			16.7			16.9	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	22.7	4.9	10.5	4.9	23.4	6.3	9.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	4.0	25.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1/2), s	4.0	6.7	2.5	5.0	2.5	9.9	3.6	3.0				
Green Ext Time (p_c), s	0.0	10.6	0.0	1.6	0.0	9.5	0.0	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				10.0								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
 39: Van Buren & Orangethorpe

Existing AM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↑	↖	↖	↑	↖
Traffic Volume (veh/h)	27	484	39	37	723	35	21	50	22	48	248	154
Future Volume (veh/h)	27	484	39	37	723	35	21	50	22	48	248	154
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	31	556	45	43	831	40	24	57	25	55	285	177
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1371	111	140	1492	641	116	468	398	153	507	431
Arrive On Green	0.07	0.41	0.41	0.08	0.42	0.42	0.07	0.25	0.25	0.09	0.27	0.27
Sat Flow, veh/h	1774	3317	268	1774	3539	1520	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	31	296	305	43	831	40	24	57	25	55	285	177
Grp Sat Flow(s),veh/h/ln	1774	1770	1815	1774	1770	1520	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.8	5.5	5.6	1.1	8.3	0.7	0.6	1.1	0.6	1.4	6.2	4.3
Cycle Q Clear(g_c), s	0.8	5.5	5.6	1.1	8.3	0.7	0.6	1.1	0.6	1.4	6.2	4.3
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	731	750	140	1492	641	116	468	398	153	507	431
V/C Ratio(X)	0.25	0.40	0.41	0.31	0.56	0.06	0.21	0.12	0.06	0.36	0.56	0.41
Avail Cap(c_a), veh/h	226	828	849	339	1881	808	226	1188	1010	226	1188	1010
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	9.7	9.7	20.4	10.3	8.1	20.8	13.6	13.4	20.3	14.7	14.0
Incr Delay (d2), s/veh	1.0	0.4	0.4	1.2	0.3	0.0	0.9	0.1	0.1	1.4	1.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	2.8	0.6	4.1	0.3	0.3	0.6	0.3	0.7	3.3	2.0
LnGrp Delay(d),s/veh	21.7	10.1	10.1	21.7	10.6	8.1	21.7	13.7	13.5	21.7	15.7	14.7
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		632			914			106			517	
Approach Delay, s/veh		10.7			11.0			15.5			16.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	21.4	5.1	14.8	5.3	21.8	6.1	13.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	4.0	28.0	4.0	23.0	4.0	28.0					
Max Q Clear Time (g_c+11), s	7.6	2.6	8.2	2.8	10.3	3.4	3.1					
Green Ext Time (p_c), s	0.0	7.4	0.0	2.6	0.0	7.5	0.0	2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.3								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
40: Richfield & Orangethorpe

Existing AM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	452	63	82	736	64	10	124	41	68	394	39
Future Volume (veh/h)	51	452	63	82	736	64	10	124	41	68	394	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	514	72	93	836	73	11	141	47	77	448	44
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1399	626	188	1470	631	93	631	203	168	917	90
Arrive On Green	0.09	0.40	0.40	0.11	0.42	0.42	0.05	0.24	0.24	0.09	0.28	0.28
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	1774	2635	848	1774	3257	319
Grp Volume(v), veh/h	58	514	72	93	836	73	11	93	95	77	243	249
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	1774	1770	1713	1774	1770	1807
Q Serve(g_s), s	1.5	5.0	1.4	2.4	8.8	1.4	0.3	2.0	2.2	2.0	5.5	5.6
Cycle Q Clear(g_c), s	1.5	5.0	1.4	2.4	8.8	1.4	0.3	2.0	2.2	2.0	5.5	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		0.18
Lane Grp Cap(c), veh/h	152	1399	626	188	1470	631	93	424	410	168	498	508
V/C Ratio(X)	0.38	0.37	0.12	0.49	0.57	0.12	0.12	0.22	0.23	0.46	0.49	0.49
Avail Cap(c_a), veh/h	219	1822	815	219	1822	783	219	1093	1059	219	1093	1116
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	10.4	9.3	20.5	10.9	8.7	21.9	14.8	14.9	20.8	14.5	14.5
Incr Delay (d2), s/veh	1.6	0.2	0.1	2.0	0.3	0.1	0.6	0.3	0.3	2.0	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.5	0.6	1.3	4.3	0.6	0.2	1.0	1.1	1.1	2.8	2.9
LnGrp Delay(d),s/veh	22.5	10.5	9.4	22.5	11.2	8.8	22.5	15.1	15.1	22.8	15.3	15.3
LnGrp LOS	C	B	A	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		644			1002			199			569	
Approach Delay, s/veh		11.5			12.1			15.5			16.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	21.2	4.6	15.7	6.2	22.2	6.6	13.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+14), s	4.0	7.0	2.3	7.6	3.5	10.8	4.0	4.2				
Green Ext Time (p_c), s	0.0	8.9	0.0	4.1	0.0	7.4	0.0	4.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.2								
HCM 2010 LOS				B								

**Intersection**

Intersection Delay, s/veh 11.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	28	173	67	20	152	15	26	59	16	29	247	35
Future Vol, veh/h	28	173	67	20	152	15	26	59	16	29	247	35
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	204	79	24	179	18	31	69	19	34	291	41
Number of Lanes	1	2	0	1	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay	11.5	11.4	10.9	12.5
HCM LOS	B	B	B	B
























Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	
Vol Left, %		47%	0%	100%	0%	0%	100%	0%	0%	19%	0%
Vol Thru, %		53%	65%	0%	100%	46%	0%	100%	77%	81%	78%
Vol Right, %		0%	35%	0%	0%	54%	0%	0%	23%	0%	22%
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane		56	46	28	115	125	20	101	66	153	159
LT Vol		26	0	28	0	0	20	0	0	29	0
Through Vol		30	30	0	115	58	0	101	51	124	124
RT Vol		0	16	0	0	67	0	0	15	0	35
Lane Flow Rate		65	54	33	136	147	24	119	77	179	186
Geometry Grp		8	8	8	8	8	8	8	8	8	8
Degree of Util (X)		0.134	0.103	0.067	0.255	0.26	0.049	0.231	0.146	0.332	0.332
Departure Headway (Hd)		7.385	6.901	7.284	6.775	6.393	7.488	6.979	6.816	6.659	6.408
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap		483	515	489	526	557	475	511	522	536	558
Service Time		5.18	4.696	5.069	4.56	4.177	5.279	4.769	4.606	4.435	4.184
HCM Lane V/C Ratio		0.135	0.105	0.067	0.259	0.264	0.051	0.233	0.148	0.334	0.333
HCM Control Delay		11.3	10.5	10.6	11.9	11.4	10.7	11.9	10.8	12.7	12.4
HCM Lane LOS		B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q		0.5	0.3	0.2	1	1	0.2	0.9	0.5	1.4	1.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	124	40	4	131	30	14	144	21	56	345	50
Future Volume (veh/h)	25	124	40	4	131	30	14	144	21	56	345	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	28	139	45	4	147	34	16	162	24	63	388	56
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	551	172	367	596	134	788	2159	315	983	2164	310
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1198	2656	830	1195	2871	647	942	3101	452	1193	3108	445
Grp Volume(v), veh/h	28	91	93	4	89	92	16	91	95	63	220	224
Grp Sat Flow(s),veh/h/ln	1198	1770	1716	1195	1770	1749	942	1770	1783	1193	1770	1784
Q Serve(g_s), s	0.8	1.8	1.9	0.1	1.8	1.8	0.2	0.7	0.7	0.7	1.8	1.8
Cycle Q Clear(g_c), s	2.7	1.8	1.9	2.0	1.8	1.8	2.1	0.7	0.7	1.5	1.8	1.8
Prop In Lane	1.00		0.48	1.00		0.37	1.00		0.25	1.00		0.25
Lane Grp Cap(c), veh/h	369	367	356	367	367	363	788	1232	1242	983	1232	1242
V/C Ratio(X)	0.08	0.25	0.26	0.01	0.24	0.25	0.02	0.07	0.08	0.06	0.18	0.18
Avail Cap(c_a), veh/h	897	1147	1113	893	1147	1134	788	1232	1242	983	1232	1242
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	13.8	13.8	14.7	13.8	13.8	2.6	2.0	2.0	2.3	2.2	2.2
Incr Delay (d2), s/veh	0.1	0.3	0.4	0.0	0.3	0.4	0.0	0.1	0.1	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.9	0.9	0.0	0.9	0.9	0.1	0.4	0.4	0.3	1.0	1.0
LnGrp Delay(d),s/veh	15.0	14.1	14.2	14.7	14.1	14.2	2.6	2.1	2.1	2.4	2.5	2.5
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		212			185			202			507	
Approach Delay, s/veh		14.3			14.1			2.2			2.5	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		10.6		31.0		10.6				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		4.1		4.7		3.8		4.0				
Green Ext Time (p_c), s		4.0		2.1		4.0		2.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				6.6								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
1: Kraemer & Golden

Existing PM  
07/11/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	13	40	89	13	94	39	606	99	117	975	19
Future Volume (veh/h)	23	13	40	89	13	94	39	606	99	117	975	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	24	14	42	93	14	98	41	631	103	122	1016	20
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	335	157	321	473	393	334	504	2376	1063	644	2376	1020
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	768	742	1520	1342	1863	1583	542	3539	1583	720	3539	1520
Grp Volume(v), veh/h	38	0	42	93	14	98	41	631	103	122	1016	20
Grp Sat Flow(s),veh/h/ln	1510	0	1520	1342	1863	1583	542	1770	1583	720	1770	1520
Q Serve(g_s), s	0.0	0.0	0.8	2.0	0.2	1.8	1.3	2.4	0.8	2.8	4.5	0.1
Cycle Q Clear(g_c), s	0.6	0.0	0.8	2.6	0.2	1.8	5.8	2.4	0.8	5.2	4.5	0.1
Prop In Lane	0.63		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	0	321	473	393	334	504	2376	1063	644	2376	1020
V/C Ratio(X)	0.08	0.00	0.13	0.20	0.04	0.29	0.08	0.27	0.10	0.19	0.43	0.02
Avail Cap(c_a), veh/h	1333	0	1207	1255	1479	1257	602	3018	1350	774	3018	1296
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.8	0.0	10.9	11.8	10.7	11.3	3.9	2.2	2.0	3.3	2.6	1.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.2	0.0	0.5	0.1	0.1	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	0.8	0.1	0.8	0.2	1.2	0.3	0.6	2.2	0.1
LnGrp Delay(d),s/veh	10.9	0.0	11.1	12.0	10.7	11.8	4.0	2.3	2.0	3.4	2.7	1.9
LnGrp LOS	B		B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		80			205			775			1158	
Approach Delay, s/veh		11.0			11.8			2.3			2.8	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		24.8		9.2		24.8		9.2				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		7.8		2.8		7.2		4.6				
Green Ext Time (p_c), s		13.0		1.0		13.3		1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			3.7									
HCM 2010 LOS			A									





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	64	60	30	79	41	47	269	38	39	355	39
Future Volume (veh/h)	39	64	60	30	79	41	47	269	38	39	355	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	70	66	33	87	45	52	296	42	43	390	43
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	649	532	452	657	532	452	775	1646	231	831	1699	186
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	1253	1863	1583	1248	1863	1583	951	3117	438	1038	3217	353
Grp Volume(v), veh/h	43	70	66	33	87	45	52	167	171	43	214	219
Grp Sat Flow(s),veh/h/ln	1253	1863	1583	1248	1863	1583	951	1770	1785	1038	1770	1800
Q Serve(g_s), s	0.6	0.6	0.7	0.4	0.8	0.4	0.7	1.1	1.1	0.5	1.4	1.4
Cycle Q Clear(g_c), s	1.3	0.6	0.7	1.0	0.8	0.4	2.1	1.1	1.1	1.6	1.4	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.20
Lane Grp Cap(c), veh/h	649	532	452	657	532	452	775	935	943	831	935	951
V/C Ratio(X)	0.07	0.13	0.15	0.05	0.16	0.10	0.07	0.18	0.18	0.05	0.23	0.23
Avail Cap(c_a), veh/h	1864	2339	1988	1868	2339	1988	1556	2387	2408	1683	2387	2429
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.2	5.7	5.7	6.1	5.8	5.6	3.3	2.6	2.6	3.1	2.7	2.7
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.3	0.2	0.4	0.2	0.2	0.5	0.5	0.1	0.7	0.7
LnGrp Delay(d),s/veh	6.3	5.8	5.9	6.1	5.9	5.7	3.3	2.7	2.7	3.1	2.8	2.8
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		179			165			390			476	
Approach Delay, s/veh		5.9			5.9			2.8			2.9	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.4		8.1		13.4		8.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		4.1		3.3		3.6		3.0				
Green Ext Time (p_c), s		5.3		1.4		5.4		1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				3.7								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↖ ↑↑↑ ↗			↖ ↖ ↑↑ ↗			↖ ↖ ↑↑ ↗		
Traffic Volume (veh/h)	55	1431	231	140	1190	603	230	419	100	733	347	41
Future Volume (veh/h)	55	1431	231	140	1190	603	230	419	100	733	347	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	60	1555	251	152	1293	655	250	455	109	797	377	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1689	272	290	2047	637	368	789	353	773	1205	0
Arrive On Green	0.06	0.38	0.38	0.08	0.40	0.40	0.11	0.22	0.22	0.22	0.34	0.00
Sat Flow, veh/h	1774	4417	711	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	60	1193	613	152	1293	655	250	455	109	797	377	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1737	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	3.1	31.3	31.5	4.0	19.0	37.6	6.5	10.7	5.4	21.0	7.3	0.0
Cycle Q Clear(g_c), s	3.1	31.3	31.5	4.0	19.0	37.6	6.5	10.7	5.4	21.0	7.3	0.0
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	114	1297	664	290	2047	637	368	789	353	773	1205	0
V/C Ratio(X)	0.53	0.92	0.92	0.52	0.63	1.03	0.68	0.58	0.31	1.03	0.31	0.00
Avail Cap(c_a), veh/h	152	1306	669	331	2047	637	368	1363	610	773	1780	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.3	27.5	27.5	41.0	22.4	27.9	40.2	32.4	30.3	36.2	22.7	0.0
Incr Delay (d2), s/veh	3.7	10.6	18.5	1.5	0.6	42.9	5.0	0.7	0.5	40.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	16.5	18.4	1.9	9.0	23.8	3.3	5.3	2.4	14.2	3.6	0.0
LnGrp Delay(d),s/veh	46.1	38.1	46.0	42.4	23.0	70.8	45.1	33.1	30.8	76.7	22.9	0.0
LnGrp LOS	D	D	D	D	C	F	D	C	C	F	C	
Approach Vol, veh/h	1866			2100			814			1174		
Approach Delay, s/veh	41.0			39.3			36.5			59.4		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	37.7	12.0	33.8	8.0	39.6	23.0	22.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	34.0	8.0	45.0	6.0	35.0	19.0	34.0					
Max Q Clear Time (g_c+11), s	33.5	8.5	9.3	5.1	39.6	23.0	12.7					
Green Ext Time (p_c), s	0.0	0.2	0.0	7.0	0.0	0.0	6.1					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay	43.4											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary  
4: Placentia & Bastanchury

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	865	149	252	842	122	198	342	259	176	385	58
Future Volume (veh/h)	47	865	149	252	842	122	198	342	259	176	385	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	883	152	257	859	124	202	349	264	180	393	59
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	1251	560	295	1621	725	417	554	412	349	884	132
Arrive On Green	0.06	0.35	0.35	0.17	0.46	0.46	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1938	1441	1774	3090	461
Grp Volume(v), veh/h	48	883	152	257	859	124	202	318	295	180	224	228
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1609	1774	1770	1781
Q Serve(g_s), s	1.9	15.5	5.0	10.2	12.5	3.3	5.8	11.3	11.6	5.1	7.5	7.6
Cycle Q Clear(g_c), s	1.9	15.5	5.0	10.2	12.5	3.3	5.8	11.3	11.6	5.1	7.5	7.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.90	1.00		0.26
Lane Grp Cap(c), veh/h	110	1251	560	295	1621	725	417	506	460	349	506	510
V/C Ratio(X)	0.44	0.71	0.27	0.87	0.53	0.17	0.48	0.63	0.64	0.52	0.44	0.45
Avail Cap(c_a), veh/h	147	1324	592	295	1621	725	417	662	602	349	662	666
HCM 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
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	20.1	16.7	29.3	14.0	11.5	16.7	22.4	22.5	17.2	21.1	21.1
Incr Delay (d2), s/veh	2.7	1.6	0.3	23.5	0.3	0.1	0.9	1.3	1.5	1.3	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.8	2.2	6.9	6.2	1.5	2.9	5.7	5.3	2.6	3.7	3.8
LnGrp Delay(d),s/veh	35.3	21.7	16.9	52.8	14.3	11.6	17.6	23.7	24.0	18.5	21.7	21.7
LnGrp LOS	D	C	B	D	B	B	B	C	C	B	C	C
Approach Vol, veh/h		1083			1240			815			632	
Approach Delay, s/veh		21.6			22.0			22.3			20.8	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	27.5	8.0	22.7	6.5	35.0	8.0	22.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	25.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	11.2	17.5	7.8	9.6	3.9	14.5	7.1	13.6				
Green Ext Time (p_c), s	0.0	6.0	0.0	6.0	0.0	11.6	0.0	5.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				21.8								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
5: Kraemer & Bastanchury

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑↓		↔	↑↑↓		↔	↑↓		↔	↑↑↓	
Traffic Volume (veh/h)	178	939	203	87	782	86	225	625	82	62	656	292
Future Volume (veh/h)	178	939	203	87	782	86	225	625	82	62	656	292
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	184	968	209	90	806	89	232	644	85	64	676	301
Adj No. of Lanes	2	2	0	1	3	0	2	2	0	1	3	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	1133	244	161	1763	194	272	1074	142	127	1157	507
Arrive On Green	0.10	0.39	0.39	0.09	0.38	0.38	0.08	0.34	0.34	0.07	0.33	0.33
Sat Flow, veh/h	3442	2898	625	1774	4652	511	3442	3145	414	1774	3465	1519
Grp Volume(v), veh/h	184	591	586	90	586	309	232	362	367	64	661	316
Grp Sat Flow(s),veh/h/ln	1721	1770	1753	1774	1695	1773	1721	1770	1790	1774	1695	1595
Q Serve(g_s), s	3.8	23.2	23.3	3.7	9.9	9.9	5.1	12.9	12.9	2.6	12.3	12.5
Cycle Q Clear(g_c), s	3.8	23.2	23.3	3.7	9.9	9.9	5.1	12.9	12.9	2.6	12.3	12.5
Prop In Lane	1.00		0.36	1.00		0.29	1.00		0.23	1.00		0.95
Lane Grp Cap(c), veh/h	353	692	685	161	1285	672	272	604	611	127	1132	533
V/C Ratio(X)	0.52	0.85	0.86	0.56	0.46	0.46	0.85	0.60	0.60	0.50	0.58	0.59
Avail Cap(c_a), veh/h	408	699	692	257	1429	747	272	699	707	140	1339	630
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	21.1	21.2	33.1	17.7	17.7	34.5	20.7	20.7	34.0	20.9	21.0
Incr Delay (d2), s/veh	1.2	10.0	10.2	3.0	0.3	0.5	22.2	1.1	1.1	3.1	0.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	13.1	13.2	1.9	4.6	4.9	3.2	6.4	6.5	1.4	5.8	5.6
LnGrp Delay(d),s/veh	33.5	31.1	31.4	36.1	18.0	18.2	56.7	21.8	21.8	37.0	21.4	22.1
LnGrp LOS	C	C	C	D	B	B	E	C	C	D	C	C
Approach Vol, veh/h		1361			985			961			1041	
Approach Delay, s/veh		31.5			19.7			30.2			22.6	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	31.7	8.0	27.4	9.8	30.8	7.4	27.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	28.0	28.0	4.0	28.0	7.0	30.0	4.0	28.0				
Max Q Clear Time (g_c+15), s	25.3	7.1	14.5	5.8	11.9	4.6	14.9					
Green Ext Time (p_c), s	0.1	2.4	0.0	8.9	0.1	12.9	0.0	8.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				26.4								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
6: Valencia & Bastanchury

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑↑	↗	↔	↑↑		↔	↑↑		↔	↑↑	
Traffic Volume (veh/h)	90	759	170	97	697	35	106	265	97	41	298	102
Future Volume (veh/h)	90	759	170	97	697	35	106	265	97	41	298	102
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	100	843	189	108	774	39	118	294	108	46	331	113
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1527	683	199	1504	76	366	899	323	385	917	308
Arrive On Green	0.11	0.43	0.43	0.11	0.44	0.44	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3429	173	942	2552	918	979	2604	874
Grp Volume(v), veh/h	100	843	189	108	399	414	118	202	200	46	223	221
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1832	942	1770	1701	979	1770	1708
Q Serve(g_s), s	3.1	10.3	4.5	3.3	9.5	9.5	6.2	4.8	5.0	2.1	5.4	5.6
Cycle Q Clear(g_c), s	3.1	10.3	4.5	3.3	9.5	9.5	11.7	4.8	5.0	7.1	5.4	5.6
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.54	1.00		0.51
Lane Grp Cap(c), veh/h	187	1527	683	199	776	803	366	623	599	385	623	602
V/C Ratio(X)	0.53	0.55	0.28	0.54	0.51	0.51	0.32	0.32	0.33	0.12	0.36	0.37
Avail Cap(c_a), veh/h	276	1655	740	461	1011	1047	474	827	795	498	827	799
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	12.2	10.6	24.2	11.8	11.8	18.3	13.7	13.7	16.3	13.9	13.9
Incr Delay (d2), s/veh	2.4	0.3	0.2	2.3	0.5	0.5	0.5	0.3	0.3	0.1	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.0	2.0	1.7	4.7	4.8	1.7	2.4	2.4	0.6	2.7	2.6
LnGrp Delay(d),s/veh	26.8	12.6	10.8	26.5	12.3	12.3	18.8	14.0	14.1	16.5	14.2	14.3
LnGrp LOS	C	B	B	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		1132			921			520			490	
Approach Delay, s/veh		13.5			13.9			15.1			14.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	26.9		22.3	8.1	27.3		22.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	30.0	25.0		25.0	7.0	31.0		25.0				
Max Q Clear Time (g_c+15), s	15.3	12.3		9.1	5.1	11.5		13.7				
Green Ext Time (p_c), s	0.1	8.8		5.6	0.0	11.9		4.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
7: McCormac & Bastanchury

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	799	41	42	791	20	35	15	41	17	10	6
Future Volume (veh/h)	6	799	41	42	791	20	35	15	41	17	10	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	832	43	44	824	21	36	16	43	18	10	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	647	2364	122	633	2435	62	277	44	117	338	78	47
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	649	3424	177	631	3527	90	595	264	710	845	474	283
Grp Volume(v), veh/h	6	430	445	44	413	432	95	0	0	34	0	0
Grp Sat Flow(s),veh/h/ln	649	1770	1832	631	1770	1847	1569	0	0	1601	0	0
Q Serve(g_s), s	0.1	2.8	2.8	0.8	2.6	2.6	1.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	2.8	2.8	3.6	2.6	2.6	1.4	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.05	0.38		0.45	0.53		0.18
Lane Grp Cap(c), veh/h	647	1222	1265	633	1222	1275	438	0	0	463	0	0
V/C Ratio(X)	0.01	0.35	0.35	0.07	0.34	0.34	0.22	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	831	1724	1784	812	1724	1799	1797	0	0	1788	0	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.3	1.8	1.8	2.5	1.7	1.7	10.2	0.0	0.0	9.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.0	0.2	0.2	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	1.4	0.2	1.2	1.3	0.7	0.0	0.0	0.2	0.0	0.0
LnGrp Delay(d),s/veh	2.3	1.9	1.9	2.5	1.9	1.9	10.5	0.0	0.0	9.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			A		
Approach Vol, veh/h		881			889			95			34	
Approach Delay, s/veh		1.9			1.9			10.5			9.9	
Approach LOS		A			A			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		6.6		21.1		6.6		21.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		3.4		4.8		2.4		5.6				
Green Ext Time (p_c), s		0.7		11.9		0.7		11.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				2.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
8: Bradford & Yorba Linda

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑↑ ↗			↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	70	1361	132	194	1135	100	182	124	185	110	88	26
Future Volume (veh/h)	70	1361	132	194	1135	100	182	124	185	110	88	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	72	1403	136	200	1170	103	188	128	191	113	91	27
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1974	191	303	2397	211	451	566	481	395	419	124
Arrive On Green	0.09	0.42	0.42	0.17	0.50	0.50	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	4715	457	1774	4760	419	1269	1863	1583	1056	1381	410
Grp Volume(v), veh/h	72	1009	530	200	833	440	188	128	191	113	0	118
Grp Sat Flow(s),veh/h/ln	1774	1695	1782	1774	1695	1789	1269	1863	1583	1056	0	1790
Q Serve(g_s), s	2.2	13.8	13.8	5.9	9.1	9.1	7.3	2.9	5.4	5.0	0.0	2.8
Cycle Q Clear(g_c), s	2.2	13.8	13.8	5.9	9.1	9.1	10.0	2.9	5.4	7.9	0.0	2.8
Prop In Lane	1.00		0.26	1.00		0.23	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	152	1419	746	303	1707	901	451	566	481	395	0	544
V/C Ratio(X)	0.47	0.71	0.71	0.66	0.49	0.49	0.42	0.23	0.40	0.29	0.00	0.22
Avail Cap(c_a), veh/h	190	1453	764	317	1707	901	746	998	848	640	0	959
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	13.5	13.5	21.7	9.2	9.2	18.3	14.6	15.4	17.5	0.0	14.5
Incr Delay (d2), s/veh	2.3	1.6	3.0	4.7	0.2	0.4	0.6	0.2	0.5	0.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.6	7.3	3.3	4.2	4.5	2.6	1.5	2.4	1.5	0.0	1.4
LnGrp Delay(d),s/veh	26.7	15.1	16.5	26.5	9.4	9.6	18.9	14.8	16.0	17.9	0.0	14.7
LnGrp LOS	C	B	B	C	A	A	B	B	B	B		B
Approach Vol, veh/h		1611			1473			507			231	
Approach Delay, s/veh		16.1			11.8			16.8			16.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	1.6	25.5		19.0	6.8	30.2		19.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	22.0		28.0	4.0	26.0		28.0				
Max Q Clear Time (g_c+11), s	15.8	15.8		9.9	4.2	11.1		12.0				
Green Ext Time (p_c), s	0.0	5.7		3.1	0.0	13.3		3.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.5								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔↔		↔↔↔	↔↔↔		↔↔	↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	220	1217	172	156	1016	129	251	639	187	166	571	214
Future Volume (veh/h)	220	1217	172	156	1016	129	251	639	187	166	571	214
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	227	1255	177	161	1047	133	259	659	193	171	589	221
Adj No. of Lanes	2	3	0	1	3	0	2	2	1	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	380	1716	242	210	1778	226	245	1058	473	189	1701	530
Arrive On Green	0.11	0.38	0.38	0.12	0.39	0.39	0.07	0.30	0.30	0.11	0.33	0.33
Sat Flow, veh/h	3442	4505	635	1774	4571	580	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	227	944	488	161	776	404	259	659	193	171	589	221
Grp Sat Flow(s),veh/h/ln	1721	1695	1751	1774	1695	1760	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	5.3	20.2	20.2	7.4	15.3	15.3	6.0	13.5	8.2	8.0	7.4	9.1
Cycle Q Clear(g_c), s	5.3	20.2	20.2	7.4	15.3	15.3	6.0	13.5	8.2	8.0	7.4	9.1
Prop In Lane	1.00		0.36	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	380	1291	667	210	1319	685	245	1058	473	189	1701	530
V/C Ratio(X)	0.60	0.73	0.73	0.77	0.59	0.59	1.06	0.62	0.41	0.90	0.35	0.42
Avail Cap(c_a), veh/h	408	1326	685	210	1326	689	245	1259	563	189	1990	620
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	22.4	22.4	36.0	20.4	20.4	39.2	25.5	23.6	37.2	21.1	21.7
Incr Delay (d2), s/veh	2.1	2.0	3.9	15.4	0.7	1.3	73.6	0.7	0.6	39.5	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.8	10.5	4.5	7.2	7.7	5.3	6.7	3.7	6.0	3.5	4.0
LnGrp Delay(d),s/veh	37.8	24.4	26.3	51.4	21.1	21.7	112.8	26.2	24.2	76.7	21.2	22.2
LnGrp LOS	D	C	C	D	C	C	F	C	C	E	C	C
Approach Vol, veh/h		1659			1341			1111			981	
Approach Delay, s/veh		26.8			24.9			46.0			31.1	
Approach LOS		C			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.0	34.1	8.0	30.2	11.3	34.8	11.0	27.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	31.0	4.0	31.0	8.0	31.0	7.0	28.0				
Max Q Clear Time (g_c+1/4), s	19.4	22.2	8.0	11.1	7.3	17.3	10.0	15.5				
Green Ext Time (p_c), s	0.0	8.0	0.0	10.4	0.1	11.9	0.0	7.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				31.3								
HCM 2010 LOS				C								



HCM Signalized Intersection Capacity Analysis  
 10: Palm & Yorba Linda

Existing PM  
 07/11/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	1176	365	42	1034	280	46
Future Volume (vph)	1176	365	42	1034	280	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0		2.0	2.0	2.0	
Lane Util. Factor	0.91		1.00	0.95	0.97	
Frt	0.96		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	4905		1770	3539	3392	
Flt Permitted	1.00		0.17	1.00	0.96	
Satd. Flow (perm)	4905		313	3539	3392	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1251	388	45	1100	298	49
RTOR Reduction (vph)	86	0	0	0	27	0
Lane Group Flow (vph)	1553	0	45	1100	320	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	6	
Permitted Phases			8		6	
Actuated Green, G (s)	21.8		21.8	21.8	8.9	
Effective Green, g (s)	23.8		23.8	23.8	10.9	
Actuated g/C Ratio	0.61		0.61	0.61	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3016		192	2176	955	
v/s Ratio Prot	c0.32			0.31	c0.09	
v/s Ratio Perm			0.14			
v/c Ratio	0.51		0.23	0.51	0.34	
Uniform Delay, d1	4.2		3.4	4.2	11.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1		0.6	0.2	0.2	
Delay (s)	4.3		4.0	4.3	11.2	
Level of Service	A		A	A	B	
Approach Delay (s)	4.3			4.3	11.2	
Approach LOS	A			A	B	

Intersection Summary

HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	4.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 11: Valencia & Yorba Linda

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	946	40	35	780	111	37	196	43	126	293	218
Future Volume (veh/h)	179	946	40	35	780	111	37	196	43	126	293	218
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	206	1087	46	40	897	128	43	225	49	145	337	251
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	1697	759	119	1508	648	298	1015	217	448	683	499
Arrive On Green	0.12	0.48	0.48	0.07	0.43	0.43	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	825	2902	620	1101	1953	1427
Grp Volume(v), veh/h	206	1087	46	40	897	128	43	136	138	145	305	283
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	825	1770	1753	1101	1770	1611
Q Serve(g_s), s	6.7	13.4	0.9	1.2	11.3	3.1	2.5	3.1	3.2	6.2	7.8	8.0
Cycle Q Clear(g_c), s	6.7	13.4	0.9	1.2	11.3	3.1	10.6	3.1	3.2	9.4	7.8	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		0.89
Lane Grp Cap(c), veh/h	214	1697	759	119	1508	648	298	619	613	448	619	563
V/C Ratio(X)	0.96	0.64	0.06	0.34	0.59	0.20	0.14	0.22	0.23	0.32	0.49	0.50
Avail Cap(c_a), veh/h	214	1709	765	184	1648	708	436	916	907	632	916	834
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	11.3	8.1	25.8	12.8	10.4	19.0	13.3	13.3	16.6	14.8	14.9
Incr Delay (d2), s/veh	50.5	0.8	0.0	1.6	0.5	0.1	0.2	0.2	0.2	0.4	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	6.7	0.4	0.7	5.6	1.3	0.6	1.5	1.6	1.9	3.9	3.7
LnGrp Delay(d),s/veh	75.8	12.1	8.1	27.4	13.3	10.6	19.3	13.5	13.5	17.1	15.4	15.6
LnGrp LOS	E	B	A	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		1339			1065			317			733	
Approach Delay, s/veh		21.8			13.5			14.3			15.8	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	29.8		22.3	9.0	26.7		22.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	26.0		28.0	5.0	25.0		28.0				
Max Q Clear Time (g_c+1), s	13.2	15.4		11.4	8.7	13.3		12.6				
Green Ext Time (p_c), s	0.0	8.7		5.9	0.0	9.4		5.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				17.3								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
 12: Rose & Yorba Linda

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	110	826	68	204	650	159	141	765	189	150	533	92
Future Volume (veh/h)	110	826	68	204	650	159	141	765	189	150	533	92
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1788	1863	1863	1863
Adj Flow Rate, veh/h	113	852	70	210	670	164	145	789	195	155	549	95
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	1223	525	289	1428	613	135	1112	477	135	1112	497
Arrive On Green	0.10	0.35	0.35	0.16	0.40	0.40	0.08	0.31	0.31	0.08	0.31	0.31
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3539	1520	1774	3539	1583
Grp Volume(v), veh/h	113	852	70	210	670	164	145	789	195	155	549	95
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1770	1520	1774	1770	1583
Q Serve(g_s), s	4.8	16.4	2.5	8.9	11.0	5.7	6.0	15.5	8.0	6.0	9.9	3.5
Cycle Q Clear(g_c), s	4.8	16.4	2.5	8.9	11.0	5.7	6.0	15.5	8.0	6.0	9.9	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	1223	525	289	1428	613	135	1112	477	135	1112	497
V/C Ratio(X)	0.61	0.70	0.13	0.73	0.47	0.27	1.07	0.71	0.41	1.15	0.49	0.19
Avail Cap(c_a), veh/h	225	1347	579	315	1527	656	135	1212	521	135	1212	542
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	22.2	17.7	31.3	17.3	15.7	36.4	23.9	21.3	36.4	21.9	19.7
Incr Delay (d2), s/veh	3.2	1.4	0.1	7.5	0.2	0.2	98.5	1.8	0.6	122.6	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.2	1.1	4.9	5.4	2.4	6.6	7.8	3.4	7.5	4.9	1.5
LnGrp Delay(d),s/veh	37.0	23.6	17.8	38.8	17.5	15.9	135.0	25.6	21.8	159.1	22.3	19.9
LnGrp LOS	D	C	B	D	B	B	F	C	C	F	C	B
Approach Vol, veh/h		1035			1044			1129			799	
Approach Delay, s/veh		24.7			21.6			39.0			48.5	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.8	29.2	8.0	26.8	10.3	33.8	8.0	26.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	28.0	28.0	4.0	25.0	8.0	32.0	4.0	25.0				
Max Q Clear Time (g_c+110), s	18.4	18.4	8.0	11.9	6.8	13.0	8.0	17.5				
Green Ext Time (p_c), s	0.1	6.9	0.0	8.0	0.0	11.3	0.0	5.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				32.7								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
13: Kraemer & Morse

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↖↗	↗	↖	↖↗	↗
Traffic Volume (veh/h)	15	15	6	108	11	71	7	1048	138	69	832	24
Future Volume (veh/h)	15	15	6	108	11	71	7	1048	138	69	832	24
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	15	6	111	11	73	7	1080	142	71	858	25
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	59	745	108	6	745	69	1253	561	144	1404	628
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.04	0.35	0.35	0.08	0.40	0.40
Sat Flow, veh/h	0	124	1583	0	12	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	30	0	6	122	0	73	7	1080	142	71	858	25
Grp Sat Flow(s),veh/h/ln	124	0	1583	13	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	1.6	0.2	18.1	4.1	2.4	12.3	0.6
Cycle Q Clear(g_c), s	30.0	0.0	0.1	30.0	0.0	1.6	0.2	18.1	4.1	2.4	12.3	0.6
Prop In Lane	0.50		1.00	0.91		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	0	745	114	0	745	69	1253	561	144	1404	628
V/C Ratio(X)	0.21	0.00	0.01	1.07	0.00	0.10	0.10	0.86	0.25	0.49	0.61	0.04
Avail Cap(c_a), veh/h	143	0	745	114	0	745	167	1277	571	167	1404	628
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	9.0	30.4	0.0	9.4	29.6	19.1	14.6	28.0	15.3	11.8
Incr Delay (d2), s/veh	0.7	0.0	0.0	104.9	0.0	0.1	0.6	6.2	0.2	2.6	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	5.3	0.0	0.7	0.1	9.8	1.8	1.3	6.1	0.3
LnGrp Delay(d),s/veh	15.9	0.0	9.0	135.4	0.0	9.4	30.2	25.3	14.8	30.6	16.1	11.8
LnGrp LOS	B		A	F		A	C	C	B	C	B	B
Approach Vol, veh/h		36			195			1229			954	
Approach Delay, s/veh		14.8			88.2			24.1			17.1	
Approach LOS		B			F			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	4.5	27.3		32.0	7.2	24.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		32.0	2.2	14.3		32.0	4.4	20.1				
Green Ext Time (p_c), s		0.0	0.0	5.7		0.0	0.0	0.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.4									
HCM 2010 LOS			C									

**Intersection**

Intersection Delay, s/veh 16.6  
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕				↕		↘	↕	↘
Traffic Vol, veh/h	66	379	17	23	280	133	0	5	36	17	217	34	51
Future Vol, veh/h	66	379	17	23	280	133	0	5	36	17	217	34	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	421	19	26	311	148	0	6	40	19	241	38	57
Number of Lanes	1	2	0	1	2	0	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	3	3
HCM Control Delay	17.1	16.3	12.7	16.9
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	9%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	62%	0%	100%	88%	0%	100%	41%	0%	100%	0%
Vol Right, %	29%	0%	0%	12%	0%	0%	59%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	66	253	143	23	187	226	217	34	51
LT Vol	5	66	0	0	23	0	0	217	0	0
Through Vol	36	0	253	126	0	187	93	0	34	0
RT Vol	17	0	0	17	0	0	133	0	0	51
Lane Flow Rate	64	73	281	159	26	207	251	241	38	57
Geometry Grp	8	8	8	8	8	8	8	7	7	7
Degree of Util (X)	0.151	0.163	0.583	0.327	0.057	0.436	0.499	0.532	0.078	0.106
Departure Headway (Hd)	8.408	7.987	7.477	7.393	8.076	7.566	7.146	7.937	7.432	6.724
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	426	449	483	486	443	475	503	456	482	533
Service Time	6.172	5.739	5.229	5.144	5.828	5.318	4.898	5.682	5.176	4.469
HCM Lane V/C Ratio	0.15	0.163	0.582	0.327	0.059	0.436	0.499	0.529	0.079	0.107
HCM Control Delay	12.7	12.3	20.2	13.7	11.3	16.1	16.9	19.4	10.8	10.3
HCM Lane LOS	B	B	C	B	B	C	C	C	B	B
HCM 95th-tile Q	0.5	0.6	3.7	1.4	0.2	2.2	2.7	3.1	0.3	0.4

HCM 2010 Signalized Intersection Summary  
15: Rose & Palm

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	4	512	5	5	8	411	1061	10	8	842	75
Future Volume (veh/h)	56	4	512	5	5	8	411	1061	10	8	842	75
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	59	4	539	5	5	8	433	1117	11	8	886	79
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	515	567	882	235	213	463	448	2057	883	62	1286	552
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.25	0.58	0.58	0.03	0.36	0.36
Sat Flow, veh/h	1395	1863	1583	537	700	1520	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	59	4	539	10	0	8	433	1117	11	8	886	79
Grp Sat Flow(s),veh/h/ln	1395	1863	1583	1236	0	1520	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	2.3	0.1	17.2	0.0	0.0	0.3	18.1	14.5	0.2	0.3	16.0	2.6
Cycle Q Clear(g_c), s	2.6	0.1	17.2	0.3	0.0	0.3	18.1	14.5	0.2	0.3	16.0	2.6
Prop In Lane	1.00		1.00	0.50		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	515	567	882	448	0	463	448	2057	883	62	1286	552
V/C Ratio(X)	0.11	0.01	0.61	0.02	0.00	0.02	0.97	0.54	0.01	0.13	0.69	0.14
Avail Cap(c_a), veh/h	647	743	1032	559	0	606	448	2057	883	142	1412	606
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	18.2	11.2	18.3	0.0	18.3	27.8	9.6	6.6	35.2	20.3	16.1
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.0	0.0	0.0	33.8	0.3	0.0	0.9	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.1	7.6	0.1	0.0	0.1	13.1	7.1	0.1	0.2	8.0	1.1
LnGrp Delay(d),s/veh	19.3	18.2	12.0	18.3	0.0	18.3	61.5	9.9	6.7	36.1	21.6	16.2
LnGrp LOS	B	B	B	B		B	E	A	A	D	C	B
Approach Vol, veh/h		602			18			1561			973	
Approach Delay, s/veh		12.8			18.3			24.2			21.3	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.9	21.0	29.3		24.9	4.6	45.7				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		19.2	20.1	18.0		2.3	2.3	16.5				
Green Ext Time (p_c), s		1.7	0.0	7.3		2.4	0.0	16.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			21.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
16: Bradford & Madison

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	141	82	103	152	93	58	342	147	84	326	73
Future Volume (veh/h)	95	141	82	103	152	93	58	342	147	84	326	73
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	107	158	92	116	171	104	65	384	165	94	366	82
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	406	331	535	413	351	557	697	592	538	720	587
Arrive On Green	0.11	0.22	0.22	0.12	0.22	0.22	0.10	0.37	0.37	0.11	0.39	0.39
Sat Flow, veh/h	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Grp Volume(v), veh/h	107	158	92	116	171	104	65	384	165	94	366	82
Grp Sat Flow(s),veh/h/ln	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Q Serve(g_s), s	1.9	3.2	2.2	2.0	3.4	2.4	0.9	7.1	3.2	1.2	6.5	1.5
Cycle Q Clear(g_c), s	1.9	3.2	2.2	2.0	3.4	2.4	0.9	7.1	3.2	1.2	6.5	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	522	406	331	535	413	351	557	697	592	538	720	587
V/C Ratio(X)	0.20	0.39	0.28	0.22	0.41	0.30	0.12	0.55	0.28	0.17	0.51	0.14
Avail Cap(c_a), veh/h	567	1025	836	695	1153	980	631	1196	1016	590	1196	976
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.5	14.6	14.2	10.4	14.5	14.1	6.8	10.8	9.5	6.6	10.2	8.7
Incr Delay (d2), s/veh	0.2	0.6	0.5	0.2	0.7	0.5	0.1	0.7	0.3	0.2	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.7	1.0	1.0	1.8	1.1	0.4	3.8	1.4	0.6	3.5	0.6
LnGrp Delay(d),s/veh	10.7	15.2	14.7	10.6	15.2	14.6	6.9	11.4	9.8	6.8	10.8	8.8
LnGrp LOS	B	B	B	B	B	B	A	B	A	A	B	A
Approach Vol, veh/h		357			391			614			542	
Approach Delay, s/veh		13.7			13.7			10.5			9.8	
Approach LOS		B			B			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	18.3	7.1	11.5	6.2	18.9	6.9	11.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	7.0	22.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+13), s	4.0	9.1	4.0	5.2	2.9	8.5	3.9	5.4				
Green Ext Time (p_c), s	0.0	5.2	0.1	2.3	0.0	5.3	0.0	2.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				11.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
17: Kraemer & Madison

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	28	208	4	15	15	213	1058	6	32	784	109
Future Volume (veh/h)	142	28	208	4	15	15	213	1058	6	32	784	109
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1900	1863	1863	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	148	29	217	4	16	16	222	1102	6	33	817	114
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	482	458	373	134	392	389	591	1949	837	463	1752	752
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.13	0.55	0.55	0.07	0.49	0.49
Sat Flow, veh/h	1372	1863	1520	163	1595	1583	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	148	29	217	20	0	16	222	1102	6	33	817	114
Grp Sat Flow(s),veh/h/ln	1372	1863	1520	1757	0	1583	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	4.2	0.5	5.8	0.0	0.0	0.4	2.2	9.4	0.1	0.4	7.0	1.9
Cycle Q Clear(g_c), s	4.6	0.5	5.8	0.4	0.0	0.4	2.2	9.4	0.1	0.4	7.0	1.9
Prop In Lane	1.00		1.00	0.20		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	482	458	373	525	0	389	591	1949	837	463	1752	752
V/C Ratio(X)	0.31	0.06	0.58	0.04	0.00	0.04	0.38	0.57	0.01	0.07	0.47	0.15
Avail Cap(c_a), veh/h	2855	3680	3003	3378	0	3128	593	2075	891	564	2075	891
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	13.3	15.3	13.2	0.0	13.2	4.3	6.8	4.7	4.9	7.6	6.4
Incr Delay (d2), s/veh	0.4	0.1	1.4	0.0	0.0	0.0	0.4	0.3	0.0	0.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.3	2.5	0.2	0.0	0.2	1.1	4.5	0.0	0.2	3.3	0.8
LnGrp Delay(d),s/veh	15.4	13.4	16.7	13.3	0.0	13.3	4.7	7.1	4.7	5.0	7.8	6.4
LnGrp LOS	B	B	B	B		B	A	A	A	A	A	A
Approach Vol, veh/h		394			36			1330			964	
Approach Delay, s/veh		16.0			13.3			6.7			7.6	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.3	7.9	24.8		13.3	5.4	27.4				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		89.0	4.0	25.0		89.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s		7.8	4.2	9.0		2.4	2.4	11.4				
Green Ext Time (p_c), s		1.6	0.0	11.8		1.6	0.0	10.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			8.4									
HCM 2010 LOS			A									



























Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	180	216	1304	269	165	1166		
Future Volume (veh/h)	180	216	1304	269	165	1166		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1788	1863	1863		
Adj Flow Rate, veh/h	188	225	1358	280	172	1215		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	407	364	1725	741	292	2447		
Arrive On Green	0.23	0.23	0.49	0.49	0.16	0.69		
Sat Flow, veh/h	1774	1583	3632	1520	1774	3632		
Grp Volume(v), veh/h	188	225	1358	280	172	1215		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1520	1774	1770		
Q Serve(g_s), s	4.6	6.5	16.2	5.9	4.6	8.2		
Cycle Q Clear(g_c), s	4.6	6.5	16.2	5.9	4.6	8.2		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	407	364	1725	741	292	2447		
V/C Ratio(X)	0.46	0.62	0.79	0.38	0.59	0.50		
Avail Cap(c_a), veh/h	944	842	1725	741	944	3417		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.8	17.6	10.8	8.2	19.6	3.7		
Incr Delay (d2), s/veh	0.8	1.7	2.5	0.3	1.9	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.3	5.7	8.3	2.5	2.4	3.9		
LnGrp Delay(d),s/veh	17.7	19.3	13.3	8.5	21.5	3.8		
LnGrp LOS	B	B	B	A	C	A		
Approach Vol, veh/h	413		1638			1387		
Approach Delay, s/veh	18.5		12.5			6.0		
Approach LOS	B		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				37.1		13.7	10.4	26.7
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				47.0		25.0	25.0	18.0
Max Q Clear Time (g_c+I1), s				10.2		8.5	6.6	18.2
Green Ext Time (p_c), s				22.9		1.2	0.4	0.0
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			10.6					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis  
19: Placentia & Nutwood

Existing PM  
07/11/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	553	38	264	30	48	11	94	650	18	12	473	240
Future Volume (vph)	553	38	264	30	48	11	94	650	18	12	473	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00		1.00	0.95	
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1696	1583	1770	1812		1770	3525		1770	3361	
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.30	1.00		0.33	1.00	
Satd. Flow (perm)	1681	1696	1583	1770	1812		565	3525		608	3361	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	570	39	272	31	49	11	97	670	19	12	488	247
RTOR Reduction (vph)	0	0	206	0	10	0	0	5	0	0	131	0
Lane Group Flow (vph)	302	307	66	31	50	0	97	684	0	12	604	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	5	5		1	1			8				4
Permitted Phases			5				8			4		
Actuated Green, G (s)	6.6	6.6	6.6	2.0	2.0		14.6	14.6		14.6	14.6	
Effective Green, g (s)	8.6	8.6	8.6	4.0	4.0		16.6	16.6		16.6	16.6	
Actuated g/C Ratio	0.24	0.24	0.24	0.11	0.11		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	410	414	386	201	205		266	1662		286	1585	
v/s Ratio Prot	0.18	c0.18		0.02	c0.03			c0.19				0.18
v/s Ratio Perm			0.04				0.17			0.02		
v/c Ratio	0.74	0.74	0.17	0.15	0.25		0.36	0.41		0.04	0.38	
Uniform Delay, d1	12.3	12.3	10.5	14.1	14.2		5.9	6.1		5.0	6.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.8	7.0	0.2	0.4	0.6		0.9	0.2		0.1	0.2	
Delay (s)	19.0	19.3	10.7	14.4	14.8		6.8	6.3		5.1	6.1	
Level of Service	B	B	B	B	B		A	A		A	A	
Approach Delay (s)		16.5			14.7			6.3			6.1	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Volume (veh/h)	63	57	12	154	82	289	14	930	200	274	616	92
Future Volume (veh/h)	63	57	12	154	82	289	14	930	200	274	616	92
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	68	61	13	166	88	311	15	1000	215	295	662	99
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	358	422	90	449	528	449	83	1690	756	255	2033	873
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.05	0.48	0.48	0.14	0.57	0.57
Sat Flow, veh/h	982	1489	317	1320	1863	1583	1774	3539	1583	1774	3539	1520
Grp Volume(v), veh/h	68	0	74	166	88	311	15	1000	215	295	662	99
Grp Sat Flow(s),veh/h/ln	982	0	1807	1320	1863	1583	1774	1770	1583	1774	1770	1520
Q Serve(g_s), s	3.5	0.0	1.9	6.7	2.2	11.0	0.5	12.9	5.1	9.0	6.1	1.9
Cycle Q Clear(g_c), s	5.7	0.0	1.9	8.7	2.2	11.0	0.5	12.9	5.1	9.0	6.1	1.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	512	449	528	449	83	1690	756	255	2033	873
V/C Ratio(X)	0.19	0.00	0.14	0.37	0.17	0.69	0.18	0.59	0.28	1.16	0.33	0.11
Avail Cap(c_a), veh/h	597	0	951	770	981	834	170	2089	935	255	2259	970
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	0.0	16.8	20.0	16.9	20.0	28.7	11.9	9.9	26.8	7.0	6.1
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.5	0.1	1.9	1.0	0.3	0.2	105.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.0	2.5	1.2	5.0	0.3	6.3	2.3	11.8	3.0	0.8
LnGrp Delay(d),s/veh	19.3	0.0	16.9	20.5	17.0	22.0	29.8	12.3	10.1	132.7	7.1	6.1
LnGrp LOS	B		B	C	B	C	C	B	B	F	A	A
Approach Vol, veh/h		142			565			1230			1056	
Approach Delay, s/veh		18.1			20.8			12.1			42.1	
Approach LOS		B			C			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.8	4.9	38.0		19.8	11.0	31.9				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		31.0	4.0	38.0		31.0	7.0	35.0				
Max Q Clear Time (g_c+I1), s		7.7	2.5	8.1		13.0	11.0	14.9				
Green Ext Time (p_c), s		2.9	0.0	16.7		2.8	0.0	13.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				24.6								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
 21: Rose & Alta Vista

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	↔
Traffic Volume (veh/h)	274	226	97	93	251	103	189	1152	49	117	831	220
Future Volume (veh/h)	274	226	97	93	251	103	189	1152	49	117	831	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	288	238	102	98	264	108	199	1213	52	123	875	232
Adj No. of Lanes	1	2	0	1	2	0	2	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	753	313	180	577	230	332	1853	79	310	1852	577
Arrive On Green	0.18	0.31	0.31	0.10	0.23	0.23	0.10	0.37	0.37	0.09	0.36	0.36
Sat Flow, veh/h	1774	2439	1014	1774	2473	986	3442	5001	214	3442	5085	1583
Grp Volume(v), veh/h	288	171	169	98	187	185	199	822	443	123	875	232
Grp Sat Flow(s),veh/h/ln	1774	1770	1684	1774	1770	1689	1721	1695	1825	1721	1695	1583
Q Serve(g_s), s	9.9	4.6	4.8	3.3	5.6	5.9	3.4	12.5	12.5	2.1	8.2	6.8
Cycle Q Clear(g_c), s	9.9	4.6	4.8	3.3	5.6	5.9	3.4	12.5	12.5	2.1	8.2	6.8
Prop In Lane	1.00		0.60	1.00		0.58	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	314	546	520	180	413	394	332	1256	676	310	1852	577
V/C Ratio(X)	0.92	0.31	0.33	0.54	0.45	0.47	0.60	0.65	0.65	0.40	0.47	0.40
Avail Cap(c_a), veh/h	314	1082	1030	257	1026	979	332	1310	705	332	1965	612
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	16.4	16.5	26.5	20.4	20.5	26.9	16.2	16.2	26.7	15.2	14.7
Incr Delay (d2), s/veh	30.3	0.3	0.4	2.5	0.8	0.9	2.9	1.1	2.1	0.8	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	2.3	2.3	1.7	2.8	2.8	1.8	6.0	6.7	1.0	3.8	3.0
LnGrp Delay(d),s/veh	55.4	16.8	16.9	29.1	21.2	21.4	29.9	17.4	18.3	27.5	15.4	15.2
LnGrp LOS	E	B	B	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		628			470			1464			1230	
Approach Delay, s/veh		34.5			22.9			19.4			16.5	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	21.2	8.0	24.6	13.0	16.5	7.6	25.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	36.0	4.0	22.0	9.0	34.0	4.0	22.0					
Max Q Clear Time (g_c+15), s	6.8	5.4	10.2	11.9	7.9	4.1	14.5					
Green Ext Time (p_c), s	0.0	4.7	0.0	9.8	0.0	4.6	0.0	6.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				21.4								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
 22: Jefferson & Alta Vista

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕	↔	↕	↕	
Traffic Volume (veh/h)	60	305	76	22	193	21	122	61	100	4	17	39
Future Volume (veh/h)	60	305	76	22	193	21	122	61	100	4	17	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	64	324	81	23	205	22	130	65	106	4	18	41
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1077	265	178	1127	120	636	536	456	593	509	456
Arrive On Green	0.13	0.38	0.38	0.10	0.35	0.35	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1774	2816	694	1774	3229	343	1338	1863	1583	1209	1770	1583
Grp Volume(v), veh/h	64	202	203	23	111	116	130	65	106	4	18	41
Grp Sat Flow(s),veh/h/ln	1774	1770	1740	1774	1770	1802	1338	1863	1583	1209	1770	1583
Q Serve(g_s), s	0.8	2.1	2.1	0.3	1.1	1.2	2.1	0.7	1.3	0.1	0.2	0.5
Cycle Q Clear(g_c), s	0.8	2.1	2.1	0.3	1.1	1.2	2.5	0.7	1.3	0.7	0.2	0.5
Prop In Lane	1.00		0.40	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	677	665	178	618	629	636	536	456	593	509	456
V/C Ratio(X)	0.27	0.30	0.31	0.13	0.18	0.18	0.20	0.12	0.23	0.01	0.04	0.09
Avail Cap(c_a), veh/h	407	2032	1998	475	2100	2139	1634	1925	1636	1494	1829	1636
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	5.6	5.6	10.7	5.9	5.9	7.7	6.9	7.1	7.1	6.7	6.8
Incr Delay (d2), s/veh	0.6	0.2	0.3	0.3	0.1	0.1	0.2	0.1	0.3	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.1	1.1	0.2	0.6	0.6	0.8	0.4	0.6	0.0	0.1	0.2
LnGrp Delay(d),s/veh	10.8	5.9	5.9	11.0	6.0	6.1	7.9	7.0	7.4	7.1	6.7	6.9
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		469			250			301			63	
Approach Delay, s/veh		6.6			6.5			7.5			6.9	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	12.0		9.5	5.5	11.1		9.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	28.0			25.0	4.0	29.0		25.0				
Max Q Clear Time (g_c+1/3), s	4.1			2.7	2.8	3.2		4.5				
Green Ext Time (p_c), s	0.0	3.9		1.4	0.0	4.0		1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			6.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary  
 23: Placentia & Chapman

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↔	↔	↑↑	↔	↔↔	↑↑		↔	↑↑	
Traffic Volume (veh/h)	255	860	192	103	769	136	256	396	116	209	361	176
Future Volume (veh/h)	255	860	192	103	769	136	256	396	116	209	361	176
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	263	887	198	106	793	140	264	408	120	215	372	181
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	1299	773	180	1278	572	417	708	206	287	702	336
Arrive On Green	0.11	0.37	0.37	0.10	0.36	0.36	0.12	0.26	0.26	0.16	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	3442	2706	788	1774	2323	1113
Grp Volume(v), veh/h	263	887	198	106	793	140	264	265	263	215	282	271
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1721	1770	1724	1774	1770	1666
Q Serve(g_s), s	5.5	15.7	5.4	4.2	13.7	4.6	5.4	9.7	9.9	8.6	9.8	10.1
Cycle Q Clear(g_c), s	5.5	15.7	5.4	4.2	13.7	4.6	5.4	9.7	9.9	8.6	9.8	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.67
Lane Grp Cap(c), veh/h	371	1299	773	180	1278	572	417	463	451	287	535	504
V/C Ratio(X)	0.71	0.68	0.26	0.59	0.62	0.24	0.63	0.57	0.58	0.75	0.53	0.54
Avail Cap(c_a), veh/h	371	1382	810	215	1430	640	417	643	627	287	715	673
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	19.8	11.1	31.9	19.5	16.6	31.1	23.8	23.9	29.7	21.5	21.6
Incr Delay (d2), s/veh	6.2	1.3	0.2	3.0	0.7	0.2	3.1	1.1	1.2	10.5	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.9	2.4	2.2	6.7	2.0	2.7	4.9	4.8	5.0	4.9	4.7
LnGrp Delay(d),s/veh	38.2	21.1	11.3	34.9	20.2	16.8	34.2	24.9	25.1	40.2	22.3	22.5
LnGrp LOS	D	C	B	C	C	B	C	C	C	D	C	C
Approach Vol, veh/h		1348			1039			792			768	
Approach Delay, s/veh		23.0			21.3			28.0			27.4	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	29.3	11.0	24.4	10.0	28.8	14.0	21.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	27.0	7.0	28.0	6.0	28.0	10.0	25.0				
Max Q Clear Time (g_c+10), s	11.2	17.7	7.4	12.1	7.5	15.7	10.6	11.9				
Green Ext Time (p_c), s	0.0	7.2	0.0	6.2	0.0	9.1	0.0	5.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				24.4								
HCM 2010 LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	225	748	53	53	656	156	38	170	67	96	138	258
Future Volume (veh/h)	225	748	53	53	656	156	38	170	67	96	138	258
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	234	779	55	55	683	162	40	177	70	100	144	269
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	1741	123	141	1148	272	357	721	275	397	536	455
Arrive On Green	0.19	0.52	0.52	0.08	0.40	0.40	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1774	3354	237	1774	2840	673	969	2507	956	1128	1863	1583
Grp Volume(v), veh/h	234	411	423	55	425	420	40	123	124	100	144	269
Grp Sat Flow(s),veh/h/ln	1774	1770	1821	1774	1770	1744	969	1770	1694	1128	1863	1583
Q Serve(g_s), s	6.5	7.7	7.7	1.6	10.0	10.0	1.8	2.8	3.0	4.0	3.2	7.7
Cycle Q Clear(g_c), s	6.5	7.7	7.7	1.6	10.0	10.0	4.9	2.8	3.0	6.9	3.2	7.7
Prop In Lane	1.00		0.13	1.00		0.39	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	346	919	945	141	715	705	357	509	487	397	536	455
V/C Ratio(X)	0.68	0.45	0.45	0.39	0.59	0.60	0.11	0.24	0.25	0.25	0.27	0.59
Avail Cap(c_a), veh/h	402	970	998	268	836	824	573	903	865	649	951	808
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	8.0	8.0	23.1	12.4	12.4	16.4	14.4	14.5	17.1	14.5	16.2
Incr Delay (d2), s/veh	3.7	0.3	0.3	1.7	0.8	0.9	0.1	0.2	0.3	0.3	0.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.7	3.8	0.8	5.0	4.9	0.5	1.4	1.4	1.3	1.6	3.5
LnGrp Delay(d),s/veh	23.4	8.3	8.3	24.9	13.2	13.2	16.6	14.7	14.8	17.5	14.8	17.4
LnGrp LOS	C	A	A	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		1068			900			287			513	
Approach Delay, s/veh		11.6			13.9			15.0			16.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	29.5		17.2	12.3	23.4		17.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	27.0		25.0	10.0	23.0		25.0				
Max Q Clear Time (g_c+13), s	6.0	9.7		9.7	8.5	12.0		6.9				
Green Ext Time (p_c), s	0.0	10.2		3.5	0.1	7.4		3.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
25: Kraemer & Chapman

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	416	159	62	356	57	275	868	132	76	488	166
Future Volume (veh/h)	181	416	159	62	356	57	275	868	132	76	488	166
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	193	443	169	66	379	61	293	923	140	81	519	177
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	1124	483	138	900	386	195	1743	263	157	1396	462
Arrive On Green	0.14	0.32	0.32	0.08	0.25	0.25	0.11	0.39	0.39	0.09	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	4460	674	1774	3780	1252
Grp Volume(v), veh/h	193	443	169	66	379	61	293	701	362	81	464	232
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1744	1774	1695	1642
Q Serve(g_s), s	6.7	6.2	5.4	2.3	5.7	2.0	7.0	10.1	10.2	2.8	6.4	6.6
Cycle Q Clear(g_c), s	6.7	6.2	5.4	2.3	5.7	2.0	7.0	10.1	10.2	2.8	6.4	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.76
Lane Grp Cap(c), veh/h	250	1124	483	138	900	386	195	1325	681	157	1252	607
V/C Ratio(X)	0.77	0.39	0.35	0.48	0.42	0.16	1.50	0.53	0.53	0.52	0.37	0.38
Avail Cap(c_a), veh/h	250	1776	763	223	1721	739	195	1648	848	167	1595	773
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	17.0	16.7	28.2	19.9	18.5	28.4	14.9	14.9	27.8	14.7	14.8
Incr Delay (d2), s/veh	13.7	0.2	0.4	2.6	0.3	0.2	251.8	0.3	0.6	2.6	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.0	2.3	1.2	2.8	0.8	17.0	4.7	5.0	1.5	3.0	3.0
LnGrp Delay(d),s/veh	40.1	17.2	17.1	30.7	20.2	18.7	280.2	15.2	15.6	30.4	14.9	15.2
LnGrp LOS	D	B	B	C	C	B	F	B	B	C	B	B
Approach Vol, veh/h		805			506			1356			777	
Approach Delay, s/veh		22.7			21.4			72.6			16.6	
Approach LOS		C			C			E			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	22.3	9.0	25.6	11.0	18.2	7.6	26.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+1+3), s	8.2	8.2	9.0	8.6	8.7	7.7	4.8	12.2				
Green Ext Time (p_c), s	0.0	6.6	0.0	11.8	0.0	6.5	0.0	10.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			40.8									
HCM 2010 LOS			D									





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	73	62	132	84	184	60	526	94	95	442	94
Future Volume (veh/h)	124	73	62	132	84	184	60	526	94	95	442	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	133	78	67	142	90	198	65	566	101	102	475	101
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	518	311	267	529	625	531	599	1680	299	540	1979	885
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1087	926	796	1238	1863	1583	834	3004	534	766	3539	1583
Grp Volume(v), veh/h	133	0	145	142	90	198	65	333	334	102	475	101
Grp Sat Flow(s),veh/h/ln	1087	0	1722	1238	1863	1583	834	1770	1768	766	1770	1583
Q Serve(g_s), s	3.7	0.0	2.3	3.6	1.3	3.6	1.6	3.9	3.9	3.2	2.6	1.1
Cycle Q Clear(g_c), s	5.0	0.0	2.3	5.9	1.3	3.6	4.2	3.9	3.9	7.1	2.6	1.1
Prop In Lane	1.00		0.46	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	518	0	578	529	625	531	599	990	989	540	1979	885
V/C Ratio(X)	0.26	0.00	0.25	0.27	0.14	0.37	0.11	0.34	0.34	0.19	0.24	0.11
Avail Cap(c_a), veh/h	869	0	1135	930	1227	1043	924	1679	1678	838	3358	1502
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	9.2	11.3	8.8	9.6	5.3	4.5	4.5	6.5	4.3	3.9
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.3	0.1	0.4	0.1	0.2	0.2	0.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.1	1.3	0.7	1.6	0.4	1.9	1.9	0.7	1.3	0.5
LnGrp Delay(d),s/veh	10.8	0.0	9.4	11.6	8.9	10.0	5.4	4.7	4.7	6.6	4.3	4.0
LnGrp LOS	B		A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		278			430			732			678	
Approach Delay, s/veh		10.1			10.3			4.8			4.6	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.2		14.7		23.2		14.7				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		6.2		7.0		9.1		7.9				
Green Ext Time (p_c), s		10.6		2.9		10.2		2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				6.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
27: Melrose & Crowther

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	170	69	41	190	52	127	336	30	9	184	33
Future Volume (veh/h)	30	170	69	41	190	52	127	336	30	9	184	33
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	185	75	45	207	57	138	365	33	10	200	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	495	421	169	512	435	266	1164	105	116	810	143
Arrive On Green	0.09	0.27	0.27	0.10	0.27	0.27	0.15	0.35	0.35	0.07	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3285	295	1774	3007	532
Grp Volume(v), veh/h	33	185	75	45	207	57	138	196	202	10	116	120
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1769
Q Serve(g_s), s	0.6	2.9	1.3	0.9	3.3	1.0	2.6	2.9	3.0	0.2	1.9	1.9
Cycle Q Clear(g_c), s	0.6	2.9	1.3	0.9	3.3	1.0	2.6	2.9	3.0	0.2	1.9	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.30
Lane Grp Cap(c), veh/h	153	495	421	169	512	435	266	627	641	116	477	477
V/C Ratio(X)	0.22	0.37	0.18	0.27	0.40	0.13	0.52	0.31	0.32	0.09	0.24	0.25
Avail Cap(c_a), veh/h	292	1534	1304	292	1534	1304	292	1457	1491	292	1457	1457
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	10.9	10.3	15.3	10.8	9.9	14.3	8.5	8.6	16.0	10.4	10.4
Incr Delay (d2), s/veh	0.7	0.5	0.2	0.8	0.5	0.1	1.6	0.3	0.3	0.3	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.6	0.6	0.5	1.7	0.4	1.4	1.5	1.5	0.1	0.9	1.0
LnGrp Delay(d),s/veh	16.2	11.4	10.5	16.1	11.3	10.1	15.8	8.8	8.8	16.3	10.7	10.7
LnGrp LOS	B	B	B	B	B	B	B	A	A	B	B	B
Approach Vol, veh/h		293			309			536			246	
Approach Delay, s/veh		11.7			11.8			10.6			10.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	11.7	7.5	11.8	5.1	12.0	4.4	14.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	28.0	4.0	28.0	4.0	28.0				
Max Q Clear Time (g_c+1/2g), s	4.9	4.9	4.6	3.9	2.6	5.3	2.2	5.0				
Green Ext Time (p_c), s	0.0	2.7	0.0	3.9	0.0	2.7	0.0	3.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				11.2								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	96	39	0	100	101	71	1109	1	42	599	59
Future Volume (veh/h)	72	96	39	0	100	101	71	1109	1	42	599	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	77	102	41	0	106	107	76	1180	1	45	637	63
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	605	515	4	339	288	175	2415	2	146	1572	703
Arrive On Green	0.10	0.32	0.32	0.00	0.18	0.18	0.10	0.46	0.46	0.08	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5248	4	1774	3539	1583
Grp Volume(v), veh/h	77	102	41	0	106	107	76	762	419	45	637	63
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1862	1774	1770	1583
Q Serve(g_s), s	1.9	1.8	0.8	0.0	2.2	2.7	1.8	7.1	7.1	1.1	5.5	1.0
Cycle Q Clear(g_c), s	1.9	1.8	0.8	0.0	2.2	2.7	1.8	7.1	7.1	1.1	5.5	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	605	515	4	339	288	175	1560	857	146	1572	703
V/C Ratio(X)	0.44	0.17	0.08	0.00	0.31	0.37	0.43	0.49	0.49	0.31	0.41	0.09
Avail Cap(c_a), veh/h	235	1234	1049	235	1234	1049	235	1796	986	274	1953	874
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	10.9	10.6	0.0	16.1	16.3	19.2	8.5	8.5	19.6	8.5	7.3
Incr Delay (d2), s/veh	1.7	0.1	0.1	0.0	0.5	0.8	1.7	0.2	0.4	1.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.9	0.4	0.0	1.2	1.2	1.0	3.3	3.7	0.6	2.7	0.5
LnGrp Delay(d),s/veh	20.9	11.0	10.7	0.0	16.6	17.1	20.9	8.8	8.9	20.8	8.7	7.3
LnGrp LOS	C	B	B		B	B	C	A	A	C	A	A
Approach Vol, veh/h		220			213			1257			745	
Approach Delay, s/veh		14.4			16.8			9.6			9.3	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	16.7	6.5	22.1	6.5	10.2	5.7	22.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	23.0	4.0	28.0	5.0	22.0				
Max Q Clear Time (g_c+10), s	4.0	3.8	3.8	7.5	3.9	4.7	3.1	9.1				
Green Ext Time (p_c), s	0.0	1.6	0.0	10.6	0.0	1.6	0.0	9.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					10.6							
HCM 2010 LOS					B							

HCM 2010 Signalized Intersection Summary  
 29: Placentia & Orangethorpe

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑↑		↔	↔	↑↑	↔	↔↑	↑↑	
Traffic Volume (veh/h)	185	653	54	140	752	170	46	309	89	217	325	251
Future Volume (veh/h)	185	653	54	140	752	170	46	309	89	217	325	251
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	193	680	56	146	783	0	48	322	93	226	339	261
Adj No. of Lanes	1	3	0	1	3	1	1	2	1	2	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	1737	142	226	1669	520	121	916	410	426	605	457
Arrive On Green	0.16	0.36	0.36	0.13	0.33	0.00	0.07	0.26	0.26	0.12	0.31	0.31
Sat Flow, veh/h	1774	4792	392	1774	5085	1583	1774	3539	1583	3442	1923	1453
Grp Volume(v), veh/h	193	480	256	146	783	0	48	322	93	226	311	289
Grp Sat Flow(s),veh/h/ln	1774	1695	1794	1774	1695	1583	1774	1770	1583	1721	1770	1606
Q Serve(g_s), s	6.4	6.6	6.7	4.9	7.7	0.0	1.6	4.7	2.9	3.9	9.2	9.4
Cycle Q Clear(g_c), s	6.4	6.6	6.7	4.9	7.7	0.0	1.6	4.7	2.9	3.9	9.2	9.4
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	287	1229	650	226	1669	520	121	916	410	426	557	505
V/C Ratio(X)	0.67	0.39	0.39	0.65	0.47	0.00	0.40	0.35	0.23	0.53	0.56	0.57
Avail Cap(c_a), veh/h	311	1620	857	226	2187	681	170	1748	782	439	930	844
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	14.9	14.9	26.0	16.7	0.0	28.0	19.0	18.3	25.8	17.9	18.0
Incr Delay (d2), s/veh	5.0	0.2	0.4	6.2	0.2	0.0	2.1	0.2	0.3	1.1	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.1	3.3	2.8	3.6	0.0	0.9	2.3	1.3	1.9	4.6	4.3
LnGrp Delay(d),s/veh	29.8	15.1	15.3	32.3	17.0	0.0	30.1	19.2	18.6	26.9	18.8	19.0
LnGrp LOS	C	B	B	C	B		C	B	B	C	B	B
Approach Vol, veh/h		929			929			463			826	
Approach Delay, s/veh		18.2			19.4			20.2			21.1	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	24.8	6.3	21.7	12.2	22.6	9.8	18.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	31.0	9.0	25.0	6.0	29.0				
Max Q Clear Time (g_c+10), s	4.0	8.7	3.6	11.4	8.4	9.7	5.9	6.7				
Green Ext Time (p_c), s	0.0	10.3	0.0	6.3	0.0	8.9	0.0	6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.6								
HCM 2010 LOS				B								

HCM Signalized Intersection Capacity Analysis  
30: SR57 SB Ramp & Orangethorpe

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	840	3	13	817	388	4	5	11	167	2	185
Future Volume (vph)	224	840	3	13	817	388	4	5	11	167	2	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	9	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5083		1770	5085	1583		1701	1425	1681	1522	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5083		1770	5085	1583		1701	1425	1681	1522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	913	3	14	888	422	4	5	12	182	2	201
RTOR Reduction (vph)	0	1	0	0	0	208	0	0	11	0	148	0
Lane Group Flow (vph)	243	916	0	14	888	214	0	9	1	164	73	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	4.4	26.9		0.5	23.0	23.0		1.2	1.2	13.2	13.2	
Effective Green, g (s)	6.4	28.9		2.5	25.0	25.0		3.2	3.2	15.2	15.2	
Actuated g/C Ratio	0.11	0.50		0.04	0.43	0.43		0.06	0.06	0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	380	2541		76	2199	684		94	78	442	400	
v/s Ratio Prot	c0.07	0.18		0.01	c0.17			c0.01		c0.10	0.05	
v/s Ratio Perm						0.13			0.00			
v/c Ratio	0.64	0.36		0.18	0.40	0.31		0.10	0.01	0.37	0.18	
Uniform Delay, d1	24.6	8.8		26.7	11.3	10.8		25.9	25.8	17.4	16.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	0.1		1.2	0.1	0.3		0.4	0.0	0.5	0.2	
Delay (s)	28.1	8.9		27.8	11.4	11.0		26.4	25.8	17.9	16.7	
Level of Service	C	A		C	B	B		C	C	B	B	
Approach Delay (s)		12.9			11.5			26.1			17.2	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑			↑↑↑		↔↔		↗			
Traffic Volume (veh/h)	195	832	0	0	1016	422	177	0	667	0	0	0
Future Volume (veh/h)	195	832	0	0	1016	422	177	0	667	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	212	904	0	0	1104	459	192	0	725			
Adj No. of Lanes	2	3	0	0	3	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	303	2242	0	0	1141	474	1722	0	792			
Arrive On Green	0.09	0.44	0.00	0.00	0.32	0.32	0.50	0.00	0.50			
Sat Flow, veh/h	3442	5253	0	0	3696	1466	3442	0	1583			
Grp Volume(v), veh/h	212	904	0	0	1061	502	192	0	725			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1604	1721	0	1583			
Q Serve(g_s), s	4.1	8.2	0.0	0.0	21.0	21.0	2.0	0.0	28.7			
Cycle Q Clear(g_c), s	4.1	8.2	0.0	0.0	21.0	21.0	2.0	0.0	28.7			
Prop In Lane	1.00		0.00	0.00		0.91	1.00		1.00			
Lane Grp Cap(c), veh/h	303	2242	0	0	1096	519	1722	0	792			
V/C Ratio(X)	0.70	0.40	0.00	0.00	0.97	0.97	0.11	0.00	0.92			
Avail Cap(c_a), veh/h	303	2242	0	0	1096	519	1821	0	838			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	30.1	12.9	0.0	0.0	22.7	22.7	9.0	0.0	15.7			
Incr Delay (d2), s/veh	6.9	0.1	0.0	0.0	19.8	31.5	0.0	0.0	14.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.2	3.9	0.0	0.0	12.7	13.7	0.9	0.0	15.4			
LnGrp Delay(d),s/veh	37.1	13.1	0.0	0.0	42.5	54.2	9.0	0.0	29.8			
LnGrp LOS	D	B			D	D	A		C			
Approach Vol, veh/h		1116			1563			917				
Approach Delay, s/veh		17.6			46.3			25.4				
Approach LOS		B			D			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.0			8.0	24.0		36.1				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		10.2			6.1	23.0		30.7				
Green Ext Time (p_c), s		14.7			0.0	0.0		1.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					32.1							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary  
 32: Melrose & Orangethorpe

























Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔↔			↔↔↔↔			↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	84	953	192	44	699	52	427	333	68	60	178	187
Future Volume (veh/h)	84	953	192	44	699	52	427	333	68	60	178	187
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	88	993	200	46	728	54	445	347	71	62	185	195
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	294	1595	321	240	1738	128	300	1005	203	137	443	397
Arrive On Green	0.09	0.38	0.38	0.07	0.36	0.36	0.17	0.34	0.34	0.08	0.25	0.25
Sat Flow, veh/h	3442	4248	854	3442	4833	357	1774	2934	594	1774	1770	1583
Grp Volume(v), veh/h	88	792	401	46	510	272	445	208	210	62	185	195
Grp Sat Flow(s),veh/h/ln	1721	1695	1712	1721	1695	1800	1774	1770	1758	1774	1770	1583
Q Serve(g_s), s	1.4	11.3	11.3	0.7	6.7	6.8	10.0	5.2	5.3	2.0	5.2	6.2
Cycle Q Clear(g_c), s	1.4	11.3	11.3	0.7	6.7	6.8	10.0	5.2	5.3	2.0	5.2	6.2
Prop In Lane	1.00		0.50	1.00		0.20	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	294	1273	643	240	1219	647	300	606	602	137	443	397
V/C Ratio(X)	0.30	0.62	0.62	0.19	0.42	0.42	1.48	0.34	0.35	0.45	0.42	0.49
Avail Cap(c_a), veh/h	349	1376	695	349	1376	730	300	927	921	180	808	723
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	15.1	15.1	25.9	14.3	14.3	24.6	14.5	14.5	26.1	18.6	18.9
Incr Delay (d2), s/veh	0.6	0.8	1.6	0.4	0.2	0.4	234.7	0.3	0.3	2.3	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.3	5.6	0.4	3.2	3.4	24.4	2.5	2.6	1.1	2.6	2.8
LnGrp Delay(d),s/veh	25.9	15.8	16.6	26.3	14.5	14.7	259.3	14.8	14.9	28.4	19.2	19.9
LnGrp LOS	C	B	B	C	B	B	F	B	B	C	B	B
Approach Vol, veh/h		1281			828			863			442	
Approach Delay, s/veh		16.8			15.2			140.9			20.8	
Approach LOS		B			B			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	24.2	12.0	16.8	7.1	23.3	6.6	22.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+1/2), s	4.0	13.3	12.0	8.2	3.4	8.8	4.0	7.3				
Green Ext Time (p_c), s	0.0	6.9	0.0	4.6	0.0	9.8	0.0	5.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				48.3								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary  
33: Kraemer & Orangethorpe

Existing PM  
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	662	200	75	378	37	252	929	128	29	462	149
Future Volume (veh/h)	232	662	200	75	378	37	252	929	128	29	462	149
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	242	690	208	78	394	39	262	968	133	30	481	155
Adj No. of Lanes	1	2	1	1	3	0	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	1132	507	150	1377	134	274	1523	681	94	1165	521
Arrive On Green	0.11	0.32	0.32	0.08	0.29	0.29	0.15	0.43	0.43	0.05	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	4713	459	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	242	690	208	78	282	151	262	968	133	30	481	155
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1782	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.0	11.7	7.3	3.0	4.6	4.7	10.4	15.3	3.7	1.2	7.5	5.2
Cycle Q Clear(g_c), s	8.0	11.7	7.3	3.0	4.6	4.7	10.4	15.3	3.7	1.2	7.5	5.2
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	1132	507	150	990	520	274	1523	681	94	1165	521
V/C Ratio(X)	1.22	0.61	0.41	0.52	0.28	0.29	0.96	0.64	0.20	0.32	0.41	0.30
Avail Cap(c_a), veh/h	199	1489	666	448	1902	1000	274	1787	800	199	1638	733
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	20.5	19.0	31.3	19.5	19.5	29.9	15.9	12.6	32.5	18.6	17.8
Incr Delay (d2), s/veh	133.9	0.5	0.5	2.8	0.2	0.3	42.7	0.6	0.1	1.9	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	5.8	3.3	1.6	2.1	2.4	8.3	7.5	1.6	0.6	3.7	2.3
LnGrp Delay(d),s/veh	165.6	21.0	19.5	34.0	19.6	19.8	72.6	16.5	12.8	34.4	18.8	18.1
LnGrp LOS	F	C	B	C	B	B	E	B	B	C	B	B
Approach Vol, veh/h		1140			511			1363			666	
Approach Delay, s/veh		51.4			21.9			26.9			19.3	
Approach LOS		D			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	24.8	13.0	25.5	10.0	22.8	5.8	32.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	28.0	9.0	31.0	6.0	38.0	6.0	34.0				
Max Q Clear Time (g_c+I1), s	5.0	13.7	12.4	9.5	10.0	6.7	3.2	17.3				
Green Ext Time (p_c), s	0.1	7.1	0.0	11.9	0.0	10.1	0.0	10.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			32.4									
HCM 2010 LOS			C									



HCM Signalized Intersection Capacity Analysis  
34: Miller/Crowther & Orangethorpe

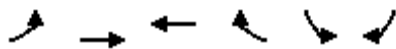
Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↖↗		↖	↗↖↗	↖	↖	↗	↖	↖	↗	↖
Traffic Volume (vph)	2	668	54	39	317	51	120	133	144	69	54	1
Future Volume (vph)	2	668	54	39	317	51	120	133	144	69	54	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	9	12	12	12	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	5029		1770	4746	1425	1681	1762	1583	1681	1758	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	1770	5029		1770	4746	1425	1681	1762	1583	1681	1758	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	2	711	57	41	337	54	128	141	153	73	57	1
RTOR Reduction (vph)	0	10	0	0	0	33	0	0	130	0	0	1
Lane Group Flow (vph)	2	758	0	41	337	21	115	154	23	64	66	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		7	7	
Permitted Phases						6			3			7
Actuated Green, G (s)	2.1	14.9		2.1	14.9	14.9	4.6	4.6	4.6	5.7	5.7	5.7
Effective Green, g (s)	4.1	16.9		4.1	16.9	16.9	6.6	6.6	6.6	7.7	7.7	7.7
Actuated g/C Ratio	0.09	0.39		0.09	0.39	0.39	0.15	0.15	0.15	0.18	0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Lane Grp Cap (vph)	167	1962		167	1852	556	256	268	241	298	312	281
v/s Ratio Prot	0.00	c0.15		c0.02	0.07		0.07	c0.09		c0.04	0.04	
v/s Ratio Perm						0.01			0.01			0.00
v/c Ratio	0.01	0.39		0.25	0.18	0.04	0.45	0.57	0.10	0.21	0.21	0.00
Uniform Delay, d1	17.8	9.5		18.2	8.7	8.2	16.7	17.0	15.8	15.2	15.2	14.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		0.8	0.0	0.0	1.3	3.0	0.2	0.4	0.3	0.0
Delay (s)	17.8	9.6		18.9	8.7	8.2	18.0	20.0	16.0	15.6	15.5	14.6
Level of Service	B	A		B	A	A	B	C	B	B	B	B
Approach Delay (s)		9.6			9.6			18.0			15.6	
Approach LOS		A			A			B			B	

Intersection Summary

HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖	↗↗↗	↖↖↖		↖↖	↖		
Traffic Volume (veh/h)	61	817	382	344	300	29		
Future Volume (veh/h)	61	817	382	344	300	29		
Number	5	2	6	16	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	64	860	402	362	316	31		
Adj No. of Lanes	1	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	184	3482	1793	838	726	334		
Arrive On Green	0.10	0.68	0.53	0.53	0.21	0.21		
Sat Flow, veh/h	1774	5253	3558	1583	3442	1583		
Grp Volume(v), veh/h	64	860	402	362	316	31		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1721	1583		
Q Serve(g_s), s	1.3	2.5	2.4	5.4	3.1	0.6		
Cycle Q Clear(g_c), s	1.3	2.5	2.4	5.4	3.1	0.6		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	184	3482	1793	838	726	334		
V/C Ratio(X)	0.35	0.25	0.22	0.43	0.44	0.09		
Avail Cap(c_a), veh/h	277	4771	2474	1155	2691	1238		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.0	2.3	4.8	5.5	13.2	12.2		
Incr Delay (d2), s/veh	1.1	0.0	0.1	0.4	0.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	1.1	1.1	2.4	1.5	0.3		
LnGrp Delay(d),s/veh	17.1	2.3	4.9	5.9	13.6	12.3		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		924	764		347			
Approach Delay, s/veh		3.4	5.4		13.5			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		28.3			6.0	22.3		10.1
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		34.0			4.0	26.0		28.0
Max Q Clear Time (g_c+I1), s		4.5			3.3	7.4		5.1
Green Ext Time (p_c), s		14.2			0.0	10.9		1.2
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			5.8					
HCM 2010 LOS			A					

HCM Signalized Intersection Capacity Analysis  
 36: Del Cerro Drive & Rose

Existing PM  
 07/11/2018



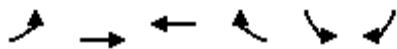
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	79	156	1304	154	56	977
Future Volume (vph)	79	156	1304	154	56	977
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.93	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3262	1441	3539	1583	1770	3539
Flt Permitted	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3262	1441	3539	1583	1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	170	1417	167	61	1062
RTOR Reduction (vph)	75	75	0	53	0	0
Lane Group Flow (vph)	96	10	1417	114	61	1062
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	3.6	3.6	30.9	30.9	1.9	36.8
Effective Green, g (s)	5.6	5.6	32.9	32.9	3.9	38.8
Actuated g/C Ratio	0.12	0.12	0.68	0.68	0.08	0.80
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	377	166	2405	1076	142	2837
v/s Ratio Prot	c0.03		c0.40		c0.03	0.30
v/s Ratio Perm		0.01		0.07		
v/c Ratio	0.25	0.06	0.59	0.11	0.43	0.37
Uniform Delay, d1	19.5	19.1	4.1	2.7	21.2	1.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2	0.4	0.0	2.1	0.1
Delay (s)	19.9	19.2	4.5	2.7	23.3	1.4
Level of Service	B	B	A	A	C	A
Approach Delay (s)	19.6		4.3			2.6
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
37: Orangethorpe & Del Cerro Drive

Existing PM  
07/11/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖ ↗	↑ ↑ ↑	↑ ↑ ↗		↖	↗ ↘		
Traffic Volume (veh/h)	142	892	485	95	82	133		
Future Volume (veh/h)	142	892	485	95	82	133		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	154	970	527	103	89	145		
Adj No. of Lanes	2	3	3	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	494	3602	2182	418	319	501		
Arrive On Green	0.14	0.71	0.51	0.51	0.18	0.18		
Sat Flow, veh/h	3442	5253	4454	821	1774	2787		
Grp Volume(v), veh/h	154	970	415	215	89	145		
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1718	1774	1393		
Q Serve(g_s), s	1.4	2.5	2.4	2.5	1.6	1.6		
Cycle Q Clear(g_c), s	1.4	2.5	2.4	2.5	1.6	1.6		
Prop In Lane	1.00			0.48	1.00	1.00		
Lane Grp Cap(c), veh/h	494	3602	1726	874	319	501		
V/C Ratio(X)	0.31	0.27	0.24	0.25	0.28	0.29		
Avail Cap(c_a), veh/h	673	5259	2653	1344	1934	3037		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.7	1.9	4.9	4.9	12.7	12.7		
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.1	0.5	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	1.1	1.1	1.2	0.8	1.3		
LnGrp Delay(d),s/veh	14.1	1.9	5.0	5.1	13.1	13.0		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		1124	630		234			
Approach Delay, s/veh		3.6	5.0		13.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				27.3		8.4	7.1	20.2
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				35.0		37.0	5.0	26.0
Max Q Clear Time (g_c+I1), s				4.5		3.6	3.4	4.5
Green Ext Time (p_c), s				14.1		0.8	0.1	11.7
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			5.2					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary  
38: Jefferson & Orangethorpe

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	923	26	15	615	46	37	208	72	44	47	52
Future Volume (veh/h)	83	923	26	15	615	46	37	208	72	44	47	52
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	88	982	28	16	654	49	39	221	77	47	50	55
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1707	49	104	1560	670	135	533	181	144	391	333
Arrive On Green	0.10	0.49	0.49	0.06	0.44	0.44	0.08	0.21	0.21	0.08	0.21	0.21
Sat Flow, veh/h	1774	3514	100	1774	3539	1520	1774	2597	880	1774	1863	1583
Grp Volume(v), veh/h	88	494	516	16	654	49	39	149	149	47	50	55
Grp Sat Flow(s),veh/h/ln	1774	1770	1845	1774	1770	1520	1774	1770	1707	1774	1863	1583
Q Serve(g_s), s	2.2	9.4	9.4	0.4	6.0	0.9	1.0	3.4	3.6	1.2	1.0	1.3
Cycle Q Clear(g_c), s	2.2	9.4	9.4	0.4	6.0	0.9	1.0	3.4	3.6	1.2	1.0	1.3
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	183	859	896	104	1560	670	135	363	350	144	391	333
V/C Ratio(X)	0.48	0.58	0.58	0.15	0.42	0.07	0.29	0.41	0.43	0.33	0.13	0.17
Avail Cap(c_a), veh/h	226	1050	1095	226	2100	902	226	1012	977	226	1066	906
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	8.7	8.7	21.1	9.1	7.6	20.6	16.3	16.3	20.5	15.1	15.3
Incr Delay (d2), s/veh	1.9	0.6	0.6	0.7	0.2	0.0	1.2	0.7	0.8	1.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.7	4.9	0.2	2.9	0.4	0.5	1.7	1.8	0.6	0.5	0.6
LnGrp Delay(d),s/veh	21.9	9.3	9.3	21.8	9.2	7.7	21.7	17.0	17.2	21.8	15.3	15.5
LnGrp LOS	C	A	A	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		1098			719			337			152	
Approach Delay, s/veh		10.3			9.4			17.6			17.4	
Approach LOS		B			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.8	24.9	5.6	11.9	6.9	22.8	5.8	11.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	4.0	25.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1/2), s	11.4	11.4	3.0	3.3	4.2	8.0	3.2	5.6				
Green Ext Time (p_c), s	0.0	9.4	0.0	2.2	0.0	10.8	0.0	2.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				11.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
 39: Van Buren & Orangethorpe

Existing PM  
 07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	884	33	20	587	46	46	157	62	43	83	57
Future Volume (veh/h)	127	884	33	20	587	46	46	157	62	43	83	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	132	921	34	21	611	48	48	164	65	45	86	59
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	1661	61	114	1453	624	148	377	321	145	374	318
Arrive On Green	0.13	0.48	0.48	0.06	0.41	0.41	0.08	0.20	0.20	0.08	0.20	0.20
Sat Flow, veh/h	1774	3481	129	1774	3539	1520	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	132	468	487	21	611	48	48	164	65	45	86	59
Grp Sat Flow(s),veh/h/ln	1774	1770	1840	1774	1770	1520	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.2	8.6	8.6	0.5	5.6	0.9	1.2	3.5	1.6	1.1	1.8	1.4
Cycle Q Clear(g_c), s	3.2	8.6	8.6	0.5	5.6	0.9	1.2	3.5	1.6	1.1	1.8	1.4
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	845	878	114	1453	624	148	377	321	145	374	318
V/C Ratio(X)	0.57	0.55	0.55	0.18	0.42	0.08	0.32	0.43	0.20	0.31	0.23	0.19
Avail Cap(c_a), veh/h	232	849	883	348	1930	829	232	1219	1036	232	1219	1036
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	8.5	8.5	20.3	9.6	8.2	19.8	16.0	15.2	19.8	15.4	15.2
Incr Delay (d2), s/veh	3.3	0.8	0.8	0.8	0.2	0.1	1.3	0.8	0.3	1.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.3	4.5	0.3	2.8	0.4	0.6	1.9	0.7	0.6	0.9	0.6
LnGrp Delay(d),s/veh	22.0	9.3	9.3	21.1	9.8	8.3	21.0	16.8	15.5	21.0	15.7	15.5
LnGrp LOS	C	A	A	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		1087			680			277			190	
Approach Delay, s/veh		10.8			10.1			17.2			16.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.9	23.9	5.8	11.2	8.0	20.8	5.7	11.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	20.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+1/2), s	12.5	10.6	3.2	3.8	5.2	7.6	3.1	5.5				
Green Ext Time (p_c), s	0.0	6.4	0.0	1.8	0.0	9.2	0.0	1.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					11.9							
HCM 2010 LOS					B							

HCM 2010 Signalized Intersection Summary  
40: Richfield & Orangethorpe

Existing PM  
07/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	823	43	52	547	92	42	315	85	62	153	37
Future Volume (veh/h)	93	823	43	52	547	92	42	315	85	62	153	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	101	895	47	57	595	100	46	342	92	67	166	40
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	1476	660	146	1379	592	135	715	190	154	765	180
Arrive On Green	0.11	0.42	0.42	0.08	0.39	0.39	0.08	0.26	0.26	0.09	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	1774	2768	735	1774	2845	669
Grp Volume(v), veh/h	101	895	47	57	595	100	46	217	217	67	102	104
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	1774	1770	1733	1774	1770	1745
Q Serve(g_s), s	2.8	10.1	0.9	1.6	6.3	2.2	1.3	5.3	5.5	1.8	2.3	2.4
Cycle Q Clear(g_c), s	2.8	10.1	0.9	1.6	6.3	2.2	1.3	5.3	5.5	1.8	2.3	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.38
Lane Grp Cap(c), veh/h	194	1476	660	146	1379	592	135	457	448	154	476	469
V/C Ratio(X)	0.52	0.61	0.07	0.39	0.43	0.17	0.34	0.47	0.48	0.44	0.21	0.22
Avail Cap(c_a), veh/h	207	1720	770	207	1720	739	207	1032	1011	207	1032	1018
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	11.7	9.0	22.4	11.5	10.3	22.5	16.1	16.2	22.3	14.6	14.6
Incr Delay (d2), s/veh	2.1	0.5	0.0	1.7	0.2	0.1	1.5	0.8	0.8	1.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.9	0.4	0.8	3.1	0.9	0.7	2.7	2.7	1.0	1.1	1.2
LnGrp Delay(d),s/veh	23.8	12.2	9.1	24.1	11.7	10.4	24.0	16.9	17.0	24.2	14.8	14.9
LnGrp LOS	C	B	A	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1043			752			480			273	
Approach Delay, s/veh		13.1			12.5			17.6			17.1	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	23.5	5.9	15.8	7.6	22.0	6.5	15.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+1), s	13.6	12.1	3.3	4.4	4.8	8.3	3.8	7.5				
Green Ext Time (p_c), s	0.0	7.3	0.0	4.0	0.0	9.1	0.0	3.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.2								
HCM 2010 LOS				B								

Intersection												
Intersection Delay, s/veh	12.7											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	82	206	29	28	227	25	44	154	12	10	131	39
Future Vol, veh/h	82	206	29	28	227	25	44	154	12	10	131	39
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	94	237	33	32	261	29	51	177	14	11	151	45
Number of Lanes	1	2	0	1	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay	12.5	13	12.9	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	36%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %	64%	87%	0%	100%	70%	0%	100%	75%	87%	63%
Vol Right, %	0%	13%	0%	0%	30%	0%	0%	25%	0%	37%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	89	82	137	98	28	151	101	76	105
LT Vol	44	0	82	0	0	28	0	0	10	0
Through Vol	77	77	0	137	69	0	151	76	66	66
RT Vol	0	12	0	0	29	0	0	25	0	39
Lane Flow Rate	139	102	94	158	112	32	174	116	87	120
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.294	0.208	0.202	0.315	0.218	0.07	0.352	0.229	0.183	0.243
Departure Headway (Hd)	7.608	7.33	7.702	7.192	6.98	7.798	7.287	7.11	7.604	7.274
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	490	467	500	514	460	494	504	472	494
Service Time	5.355	5.077	5.446	4.936	4.724	5.543	5.032	4.854	5.352	5.022
HCM Lane V/C Ratio	0.294	0.208	0.201	0.316	0.218	0.07	0.352	0.23	0.184	0.243
HCM Control Delay	13.5	12	12.4	13.2	11.7	11.1	14	12	12.1	12.4
HCM Lane LOS	B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.2	0.8	0.7	1.3	0.8	0.2	1.6	0.9	0.7	0.9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	57	162	26	17	157	47	29	277	11	29	225	36
Future Volume (veh/h)	57	162	26	17	157	47	29	277	11	29	225	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	176	28	18	171	51	32	301	12	32	245	39
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	757	119	399	669	194	854	2297	91	833	2029	319
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1154	3068	480	1173	2709	785	1091	3470	138	1062	3066	482
Grp Volume(v), veh/h	62	100	104	18	110	112	32	153	160	32	140	144
Grp Sat Flow(s),veh/h/ln	1154	1770	1778	1173	1770	1724	1091	1770	1838	1062	1770	1778
Q Serve(g_s), s	2.0	2.0	2.0	0.5	2.2	2.3	0.5	1.4	1.4	0.5	1.3	1.3
Cycle Q Clear(g_c), s	4.3	2.0	2.0	2.6	2.2	2.3	1.8	1.4	1.4	1.9	1.3	1.3
Prop In Lane	1.00		0.27	1.00		0.46	1.00		0.08	1.00		0.27
Lane Grp Cap(c), veh/h	389	437	439	399	437	426	854	1171	1217	833	1171	1177
V/C Ratio(X)	0.16	0.23	0.24	0.05	0.25	0.26	0.04	0.13	0.13	0.04	0.12	0.12
Avail Cap(c_a), veh/h	815	1090	1096	833	1090	1062	854	1171	1217	833	1171	1177
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	13.2	13.2	14.2	13.2	13.3	3.1	2.7	2.7	3.1	2.7	2.7
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.0	0.3	0.3	0.1	0.2	0.2	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.0	1.0	0.2	1.1	1.1	0.2	0.8	0.8	0.2	0.7	0.7
LnGrp Delay(d),s/veh	15.2	13.4	13.5	14.3	13.5	13.6	3.1	3.0	3.0	3.2	2.9	2.9
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		266			240			345			316	
Approach Delay, s/veh		13.9			13.6			3.0			3.0	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		12.8		31.0		12.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		3.8		6.3		3.9		4.6				
Green Ext Time (p_c), s		3.7		2.5		3.7		2.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.6								
HCM 2010 LOS				A								

# **APPENDIX G – CURRENT GENERAL PLAN INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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 Scenario Report  
 Scenario: Current GP AM

Command: Current GP AM  
 Volume: 2040 Base AM  
 Geometry: Existing  
 Impact Fee: Default Impact Fee  
 Trip Generation: None  
 Trip Distribution: None  
 Paths: Default Path  
 Routes: Default Route  
 Configuration: Default Configuration

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 Impact Analysis Report  
 Level Of Service

Intersection	Base		Future		Change in
	Del/	V/	Del/	V/	
	LOS	Veh C	LOS	Veh C	
# 1 Golden and Kraemer	A	xxxxx 0.490	A	xxxxx 0.490	+ 0.000 V/C
# 2 Golden and Valencia	A	xxxxx 0.435	A	xxxxx 0.435	+ 0.000 V/C
# 3 Imperial and Rose	E	xxxxx 0.921	E	xxxxx 0.921	+ 0.000 V/C
# 4 Placentia and Bastanchury	C	xxxxx 0.730	C	xxxxx 0.730	+ 0.000 V/C
# 5 Kraemer and Bastanchury	C	xxxxx 0.740	C	xxxxx 0.740	+ 0.000 V/C
# 6 Valencia and Bastanchury	B	xxxxx 0.683	B	xxxxx 0.683	+ 0.000 V/C
# 7 McCormac and Bastanchury	A	xxxxx 0.500	A	xxxxx 0.500	+ 0.000 V/C
# 8 Yorba Linda and Bradford	B	xxxxx 0.651	B	xxxxx 0.651	+ 0.000 V/C
# 9 Yorba Linda and Kraemer	B	xxxxx 0.691	B	xxxxx 0.691	+ 0.000 V/C
# 10 Yorba Linda and Palm	A	xxxxx 0.551	A	xxxxx 0.551	+ 0.000 V/C
# 11 Yorba Linda and Valencia	C	xxxxx 0.782	C	xxxxx 0.782	+ 0.000 V/C
# 12 Yorba Linda and Rose	D	xxxxx 0.805	D	xxxxx 0.805	+ 0.000 V/C
# 13 Kraemer and Morse	B	xxxxx 0.690	B	xxxxx 0.690	+ 0.000 V/C
# 14 Palm and Valencia	C	16.1 0.565	C	16.1 0.565	+ 0.000 V/C
# 15 Palm and Rose	D	xxxxx 0.874	D	xxxxx 0.874	+ 0.000 V/C
# 16 Madison and Bradford	A	xxxxx 0.565	A	xxxxx 0.565	+ 0.000 V/C
# 17 Madison and Kraemer	D	xxxxx 0.874	D	xxxxx 0.874	+ 0.000 V/C
# 18 Buena Vista and Rose	D	xxxxx 0.846	D	xxxxx 0.846	+ 0.000 V/C
# 19 Nutwood and Placentia	C	xxxxx 0.756	C	xxxxx 0.756	+ 0.000 V/C
# 20 Alta Vista and Kraemer	C	xxxxx 0.787	C	xxxxx 0.787	+ 0.000 V/C
# 21 Alta Vista and Rose	C	xxxxx 0.719	C	xxxxx 0.719	+ 0.000 V/C
# 22 Alta Vista and Jefferson	A	xxxxx 0.389	A	xxxxx 0.389	+ 0.000 V/C
# 23 Chapman and Placentia	B	xxxxx 0.678	B	xxxxx 0.678	+ 0.000 V/C
# 24 Chapman and Bradford	B	xxxxx 0.675	B	xxxxx 0.675	+ 0.000 V/C
# 25 Chapman and Kraemer	C	xxxxx 0.787	C	xxxxx 0.787	+ 0.000 V/C

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 26 Crowther and Placentia	A xxxxx	0.590	A xxxxx	0.590	+ 0.000 V/C
# 27 Crowther and Melrose	A xxxxx	0.470	A xxxxx	0.470	+ 0.000 V/C
# 28 Crowther and Kraemer	B xxxxx	0.607	B xxxxx	0.607	+ 0.000 V/C
# 29 Orangethorpe and Placentia	B xxxxx	0.634	B xxxxx	0.634	+ 0.000 V/C
# 30 Orangethorpe and SR-57 SB Ramp	A xxxxx	0.577	A xxxxx	0.577	+ 0.000 V/C
# 31 Orangethorpe and SR-57 NB Ramp	C xxxxx	0.752	C xxxxx	0.752	+ 0.000 V/C
# 32 Orangethorpe and Melrose	C xxxxx	0.721	C xxxxx	0.721	+ 0.000 V/C
# 33 Orangethorpe and Kraemer	D xxxxx	0.815	D xxxxx	0.815	+ 0.000 V/C
# 34 Orangethorpe and Miller/Crowth	A xxxxx	0.435	A xxxxx	0.435	+ 0.000 V/C
# 35 Orangethorpe and Chapman	A xxxxx	0.433	A xxxxx	0.433	+ 0.000 V/C
# 36 Rose Drive and Del Cerro Dr	B xxxxx	0.674	B xxxxx	0.674	+ 0.000 V/C
# 37 Orangethorpe and Del Cerro Dr	A xxxxx	0.323	A xxxxx	0.323	+ 0.000 V/C
# 38 Orangethorpe and Jefferson	A xxxxx	0.480	A xxxxx	0.480	+ 0.000 V/C
# 39 Orangethorpe and Van Buren	A xxxxx	0.503	A xxxxx	0.503	+ 0.000 V/C
# 40 Orangethorpe and Richfield	A xxxxx	0.551	A xxxxx	0.551	+ 0.000 V/C
# 41 Van Buren and Miraloma	B 11.0	0.312	B 11.0	0.312	+ 0.000 V/C
# 42 Miraloma and Richfield	A xxxxx	0.361	A xxxxx	0.361	+ 0.000 V/C

Level Of Service Computation Report  
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #1 Golden and Kraemer  
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Cycle (sec): 100 Critical Vol./Cap.(X): 0.490  
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 23 Level Of Service: A  
\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			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	0	0	1	0	0	1	0

Volume Module:

Base Vol:	24	551	90	131	940	10	8	4	13	204	14	187
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:	24	551	90	131	940	10	8	4	13	204	14	187
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:	24	551	90	131	940	10	8	4	13	204	14	187
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	25	580	95	138	989	11	8	4	14	215	15	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	580	95	138	989	11	8	4	14	215	15	197
PCE 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
MLF 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
Final Volume:	25	580	95	138	989	11	8	4	14	215	15	197

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	2.00	1.00	0.67	0.33	1.00	1.00	1.00	1.00
Final Sat.:	1700	3400	1700	1700	3400	1700	1133	567	1700	1700	1700	1700

Capacity Analysis Module:

Vol/Sat:	0.01	0.17	0.06	0.08	0.29	0.01	0.00	0.01	0.01	0.13	0.01	0.12
Crit Moves:	****			****			****		****			****

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Level Of Service Computation Report

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

Intersection #2 Golden and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.435
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.921
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #4 Placentia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 41 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #5 Kraemer and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #6 Valencia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #7 McCormac and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.500
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #8 Yorba Linda and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.651
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #9 Yorba Linda and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.



Level Of Service Computation Report

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

Intersection #10 Yorba Linda and Palm

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #11 Yorba Linda and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #12 Yorba Linda and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.805
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 53 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level Of Service Computation Report

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

Intersection #13 Kraemer and Morse

Cycle (sec): 100 Critical Vol./Cap.(X): 0.690
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 Palm and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.565
Loss Time (sec): 5 Average Delay (sec/veh): 16.1
Optimal Cycle: 0 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic movements and 12 rows for various volume and adjustment factors.

Saturation Flow Module table with 12 columns for movements and 12 rows for adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns for movements and 12 rows for volume/saturation, delay, and LOS by movement/approach.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 74 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns for different traffic movements and 12 rows for various volume and adjustment factors.

Saturation Flow Module table with 12 columns for movements and 12 rows for adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns for movements and 12 rows for volume/saturation, delay, and LOS by movement/approach.

Level Of Service Computation Report

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

Intersection #16 Madison and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.565
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #17 Madison and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 74 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #18 Buena Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.846
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows for Vol/Sat, Crit Moves, and summary statistics.

Level Of Service Computation Report

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

Intersection #19 Nutwood and Placentia

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows for Vol/Sat, Crit Moves, and summary statistics.

Level Of Service Computation Report

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

Intersection #20 Alta Vista and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 50 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves.

Level Of Service Computation Report

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

Intersection #21 Alta Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves.

Level Of Service Computation Report

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

Intersection #22 Alta Vista and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.389
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing different traffic phases. Rows include Volume Module, 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.

Table with 12 columns representing different traffic phases. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing different traffic phases. Rows include Vol/Sat, Crit Moves, and Capacity Analysis Module.

Level Of Service Computation Report

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

Intersection #23 Chapman and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.678
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing different traffic phases. Rows include Volume Module, 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.

Table with 12 columns representing different traffic phases. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing different traffic phases. Rows include Vol/Sat, Crit Moves, and Capacity Analysis Module.

Level Of Service Computation Report

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

Intersection #24 Chapman and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module table with 12 columns representing saturation flow rates.

Capacity Analysis Module table with 12 columns representing capacity and critical moves.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module table with 12 columns representing saturation flow rates.

Capacity Analysis Module table with 12 columns representing capacity and critical moves.



Level Of Service Computation Report

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

Intersection #26 Crowther and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.590
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #27 Crowther and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.470
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #28 Crowther and Kraemer

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #29 Orangethorpe and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #30 Orangethorpe and SR-57 SB Ramp/Iowa Pl

Cycle (sec): 100 Critical Vol./Cap.(X): 0.577
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.752
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level Of Service Computation Report

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

Intersection #33 Orangethorpe and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 55 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level Of Service Computation Report

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

Intersection #34 Orangethorpe and Miller/Crowther

Cycle (sec): 100 Critical Vol./Cap.(X): 0.435
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows for various volume metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for movements and 12 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report

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

Intersection #35 Orangethorpe and Chapman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.433
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows for various volume metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for movements and 12 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #36 Rose Drive and Del Cerro Dr  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.674  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 52 Level Of Service: B  
 \*\*\*\*\*

Street Name:	Rose Drive						Del Cerro Dr					
	North Bound		South Bound		East Bound		West Bound		North Bound		South Bound	
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:	Permitted	Permitted	Permitted	Protected	Protected	Protected	Permitted	Permitted	Permitted	Protected	Protected	Protected
Control:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Rights:												
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:	0	0	2	1	0	2	0	0	0	0	1	0
Volume Module:												
Base Vol:	0	554	53	75	1810	0	0	0	0	205	0	91
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:	0	554	53	75	1810	0	0	0	0	205	0	91
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:	0	554	53	75	1810	0	0	0	0	205	0	91
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	583	56	79	1905	0	0	0	0	216	0	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	583	56	79	1905	0	0	0	0	216	0	96
PCE 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
MLF 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
FinalVolume:	0	583	56	79	1905	0	0	0	0	216	0	96
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:	0.00	2.74	0.26	1.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	4655	445	1700	3400	0	0	0	0	3400	0	1700
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.13	0.05	0.56	0.00	0.00	0.00	0.00	0.06	0.00	0.06
Crit Moves:				***						***		

\*\*\*\*\*

Level Of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #37 Orangethorpe and Del Cerro Dr  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.323  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 18 Level Of Service: A  
 \*\*\*\*\*

Street Name:	Del Cerro Dr						Orangethorpe					
	North Bound		South Bound		East Bound		West Bound		North Bound		South Bound	
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:	Permitted	Permitted	Permitted	Protected	Protected	Protected	Protected	Protected	Protected	Permitted	Permitted	Permitted
Control:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Rights:												
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:	0	0	0	0	0	0	1	0	0	2	0	0
Volume Module:												
Base Vol:	0	0	0	68	0	80	118	531	0	0	849	163
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:	0	0	0	68	0	80	118	531	0	0	849	163
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:	0	0	0	68	0	80	118	531	0	0	849	163
User 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
PHF 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
PHF Volume:	0	0	0	68	0	80	118	531	0	0	849	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	68	0	80	118	531	0	0	849	163
PCE 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
MLF 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
FinalVolume:	0	0	0	68	0	80	118	531	0	0	849	163
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:	0.00	0.00	0.00	1.00	0.00	2.00	2.00	3.00	0.00	0.00	2.52	0.48
Final Sat.:	0	0	0	1700	0	3400	3400	5100	0	0	4279	821
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.02	0.03	0.10	0.00	0.00	0.20	0.20
Crit Moves:				***			***			***		

\*\*\*\*\*

Level Of Service Computation Report

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

Intersection #38 Orangethorpe and Jefferson

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #39 Orangethorpe and Van Buren

Cycle (sec): 100 Critical Vol./Cap.(X): 0.503
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #40 Orangethorpe and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and adjustments like Base Vol, Growth Adj, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow values across different lanes and movements.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics like Vol/Sat, Crit Moves, Delay/Veh, etc.

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #41 Van Buren and Miraloma

Cycle (sec): 100 Critical Vol./Cap.(X): 0.312
Loss Time (sec): 5 Average Delay (sec/veh): 11.0
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and adjustments like Base Vol, Growth Adj, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow values across different lanes and movements.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics like Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.



Level Of Service Computation Report

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

\*\*\*\*\*
Intersection #42 Miraloma and Richfield
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.361
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and a separator line.

-----  
 Scenario Report  
 Scenario: Current GP PM

Command: Current GP PM  
 Volume: 2040 Base PM  
 Geometry: Existing  
 Impact Fee: Default Impact Fee  
 Trip Generation: None  
 Trip Distribution: None  
 Paths: Default Path  
 Routes: Default Route  
 Configuration: Default Configuration

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 Impact Analysis Report  
 Level Of Service

Intersection	Base		Future		Change in
	Del/	V/	Del/	V/	
	LOS	Veh C	LOS	Veh C	
# 1 Golden and Kraemer	A	xxxxx 0.488	A	xxxxx 0.488	+ 0.000 V/C
# 2 Golden and Valencia	A	xxxxx 0.297	A	xxxxx 0.297	+ 0.000 V/C
# 3 Imperial and Rose	E	xxxxx 0.999	E	xxxxx 0.999	+ 0.000 V/C
# 4 Placentia and Bastanchury	D	xxxxx 0.861	D	xxxxx 0.861	+ 0.000 V/C
# 5 Kraemer and Bastanchury	D	xxxxx 0.812	D	xxxxx 0.812	+ 0.000 V/C
# 6 Valencia and Bastanchury	B	xxxxx 0.604	B	xxxxx 0.604	+ 0.000 V/C
# 7 McCormac and Bastanchury	A	xxxxx 0.466	A	xxxxx 0.466	+ 0.000 V/C
# 8 Yorba Linda and Bradford	C	xxxxx 0.795	C	xxxxx 0.795	+ 0.000 V/C
# 9 Yorba Linda and Kraemer	D	xxxxx 0.837	D	xxxxx 0.837	+ 0.000 V/C
# 10 Yorba Linda and Palm	A	xxxxx 0.551	A	xxxxx 0.551	+ 0.000 V/C
# 11 Yorba Linda and Valencia	B	xxxxx 0.680	B	xxxxx 0.680	+ 0.000 V/C
# 12 Yorba Linda and Rose	D	xxxxx 0.862	D	xxxxx 0.862	+ 0.000 V/C
# 13 Kraemer and Morse	A	xxxxx 0.585	A	xxxxx 0.585	+ 0.000 V/C
# 14 Palm and Valencia	C	15.8 0.560	C	15.8 0.560	+ 0.000 V/C
# 15 Palm and Rose	B	xxxxx 0.688	B	xxxxx 0.688	+ 0.000 V/C
# 16 Madison and Bradford	A	xxxxx 0.530	A	xxxxx 0.530	+ 0.000 V/C
# 17 Madison and Kraemer	B	xxxxx 0.621	B	xxxxx 0.621	+ 0.000 V/C
# 18 Buena Vista and Rose	C	xxxxx 0.757	C	xxxxx 0.757	+ 0.000 V/C
# 19 Nutwood and Placentia	B	xxxxx 0.648	B	xxxxx 0.648	+ 0.000 V/C
# 20 Alta Vista and Kraemer	D	xxxxx 0.840	D	xxxxx 0.840	+ 0.000 V/C
# 21 Alta Vista and Rose	B	xxxxx 0.675	B	xxxxx 0.675	+ 0.000 V/C
# 22 Alta Vista and Jefferson	A	xxxxx 0.321	A	xxxxx 0.321	+ 0.000 V/C
# 23 Chapman and Placentia	C	xxxxx 0.779	C	xxxxx 0.779	+ 0.000 V/C
# 24 Chapman and Bradford	C	xxxxx 0.772	C	xxxxx 0.772	+ 0.000 V/C
# 25 Chapman and Kraemer	C	xxxxx 0.711	C	xxxxx 0.711	+ 0.000 V/C

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 26 Crowther and Placentia	B xxxxx	0.616	B xxxxx	0.616	+ 0.000 V/C
# 27 Crowther and Melrose	A xxxxx	0.483	A xxxxx	0.483	+ 0.000 V/C
# 28 Crowther and Kraemer	A xxxxx	0.527	A xxxxx	0.527	+ 0.000 V/C
# 29 Orangethorpe and Placentia	B xxxxx	0.658	B xxxxx	0.658	+ 0.000 V/C
# 30 Orangethorpe and SR-57 SB Ramp	A xxxxx	0.558	A xxxxx	0.558	+ 0.000 V/C
# 31 Orangethorpe and SR-57 NB Ramp	E xxxxx	0.931	E xxxxx	0.931	+ 0.000 V/C
# 32 Orangethorpe and Melrose	D xxxxx	0.820	D xxxxx	0.820	+ 0.000 V/C
# 33 Orangethorpe and Kraemer	B xxxxx	0.690	B xxxxx	0.690	+ 0.000 V/C
# 34 Orangethorpe and Miller/Crowth	A xxxxx	0.458	A xxxxx	0.458	+ 0.000 V/C
# 35 Orangethorpe and Chapman	A xxxxx	0.547	A xxxxx	0.547	+ 0.000 V/C
# 36 Rose Drive and Del Cerro Dr	A xxxxx	0.477	A xxxxx	0.477	+ 0.000 V/C
# 37 Orangethorpe and Del Cerro Dr	A xxxxx	0.297	A xxxxx	0.297	+ 0.000 V/C
# 38 Orangethorpe and Jefferson	A xxxxx	0.530	A xxxxx	0.530	+ 0.000 V/C
# 39 Orangethorpe and Van Buren	A xxxxx	0.519	A xxxxx	0.519	+ 0.000 V/C
# 40 Orangethorpe and Richfield	A xxxxx	0.588	A xxxxx	0.588	+ 0.000 V/C
# 41 Van Buren and Miraloma	B 11.4	0.295	B 11.4	0.295	+ 0.000 V/C
# 42 Miraloma and Richfield	A xxxxx	0.318	A xxxxx	0.318	+ 0.000 V/C

Level Of Service Computation Report  
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*  
Intersection #1 Golden and Kraemer  
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.488  
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 23 Level Of Service: A  
\*\*\*\*\*

Approach: Movement:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			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	0	0	1	0	0	1	0

Volume Module:

Base Vol:	42	746	121	128	1072	20	25	14	44	97	14	105
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:	42	746	121	128	1072	20	25	14	44	97	14	105
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:	42	746	121	128	1072	20	25	14	44	97	14	105
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	44	785	127	135	1128	21	26	15	46	102	15	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	785	127	135	1128	21	26	15	46	102	15	111
PCE 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
MLF 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
Final Volume:	44	785	127	135	1128	21	26	15	46	102	15	111

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	2.00	1.00	0.64	0.36	1.00	1.00	1.00	1.00
Final Sat.:	1700	3400	1700	1700	3400	1700	1090	610	1700	1700	1700	1700

Capacity Analysis Module:

Vol/Sat:	0.03	0.23	0.07	0.08	0.33	0.01	0.02	0.02	0.03	0.06	0.01	0.07
Crit Moves:	****			****			****					****

\*\*\*\*\*

Level Of Service Computation Report

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

Intersection #2 Golden and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.297
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.999
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #4 Placentia and Bastanchury

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #5 Kraemer and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 55 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #6 Valencia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.604
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #7 McCormac and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.466
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #8 Yorba Linda and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.795
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 51 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 11 columns representing traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 11 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 11 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #9 Yorba Linda and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.837
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 11 columns representing traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 11 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 11 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #10 Yorba Linda and Palm

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #11 Yorba Linda and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.680
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.



Level Of Service Computation Report

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

Intersection #12 Yorba Linda and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.862
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 69 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module table with 12 columns representing capacity and critical moves for different movements.

Level Of Service Computation Report

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

Intersection #13 Kraemer and Morse

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module table with 12 columns representing capacity and critical moves for different movements.

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 Palm and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.560
Loss Time (sec): 5 Average Delay (sec/veh): 15.8
Optimal Cycle: 0 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, etc.).

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for saturation flow values.

Capacity Analysis Module table with 12 columns for volume/saturation and 12 columns for delay and LOS values.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.688
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, etc.).

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for saturation flow values.

Capacity Analysis Module table with 12 columns for volume/saturation and 12 columns for delay and LOS values.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

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

Intersection #16 Madison and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.530
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows of metrics including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow values and 4 rows of metrics including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis values and 2 rows of metrics including Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #17 Madison and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows of metrics including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow values and 4 rows of metrics including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis values and 2 rows of metrics including Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #18 Buena Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.757
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report

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

Intersection #19 Nutwood and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report

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

Intersection #20 Alta Vista and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 62 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level Of Service Computation Report

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

Intersection #21 Alta Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level Of Service Computation Report

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

Intersection #22 Alta Vista and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.321
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #23 Chapman and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.779
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #24 Chapman and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.772
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.711
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #26 Crowther and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.616
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #27 Crowther and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.483
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.



Level Of Service Computation Report

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

Intersection #28 Crowther and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.527
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #29 Orangethorpe and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.658
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #30 Orangethorpe and SR-57 SB Ramp/Iowa Pl

Cycle (sec): 100 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for movements and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 4 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.931
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 109 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for movements and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 4 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.820
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 11 columns representing different traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 11 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 11 columns for Vol/Sat and Crit Moves values.

Level Of Service Computation Report

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

Intersection #33 Orangethorpe and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.690
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 11 columns representing different traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 11 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 11 columns for Vol/Sat and Crit Moves values.

Level Of Service Computation Report

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

Intersection #34 Orangethorpe and Miller/Crowther

Cycle (sec): 100 Critical Vol./Cap.(X): 0.458
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #35 Orangethorpe and Chapman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.547
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #36 Rose Drive and Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.477
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes for Rose Drive and Del Cerro Dr.

Table with columns for Volume Module: 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, FinalVolume.

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

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

Level Of Service Computation Report

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

Intersection #37 Orangethorpe and Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.297
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes for Del Cerro Dr and Orangethorpe.

Table with columns for Volume Module: 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, FinalVolume.

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

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

Level Of Service Computation Report

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

Intersection #38 Orangethorpe and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.530
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level Of Service Computation Report

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

Intersection #39 Orangethorpe and Van Buren

Cycle (sec): 100 Critical Vol./Cap.(X): 0.519
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes for different movements and phases.

Saturation Flow Module:

Table with 12 columns representing saturation flow rates for different movements.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics.

Level of Service Computation Report

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

Intersection #40 Orangethorpe and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and Delay/Veh.

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #41 Van Buren and Miraloma

Cycle (sec): 100 Critical Vol./Cap.(X): 0.295
Loss Time (sec): 5 Average Delay (sec/veh): 11.4
Optimal Cycle: 0 Level of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 10 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report

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

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Intersection #42 Miraloma and Richfield
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.318
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Permitted), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flow metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.
























Saturation Flow Module table with 12 columns and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of data including Vol/Sat, Crit Moves, and a summary row.



HCM 2010 Signalized Intersection Summary  
1: Kraemer & Golden

2040 Base AM  
07/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	4	13	204	14	187	24	551	90	131	940	10
Future Volume (veh/h)	8	4	13	204	14	187	24	551	90	131	940	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	8	4	14	215	15	197	25	580	95	138	989	11
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	163	427	578	523	445	452	2163	968	601	2163	929
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	803	579	1520	1389	1863	1583	561	3539	1583	761	3539	1520
Grp Volume(v), veh/h	12	0	14	215	15	197	25	580	95	138	989	11
Grp Sat Flow(s),veh/h/ln	1382	0	1520	1389	1863	1583	561	1770	1583	761	1770	1520
Q Serve(g_s), s	0.0	0.0	0.2	4.9	0.2	3.8	0.9	2.8	0.9	3.8	5.6	0.1
Cycle Q Clear(g_c), s	0.2	0.0	0.2	5.1	0.2	3.8	6.5	2.8	0.9	6.7	5.6	0.1
Prop In Lane	0.67		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	550	0	427	578	523	445	452	2163	968	601	2163	929
V/C Ratio(X)	0.02	0.00	0.03	0.37	0.03	0.44	0.06	0.27	0.10	0.23	0.46	0.01
Avail Cap(c_a), veh/h	1145	0	1106	1198	1355	1152	548	2766	1238	731	2766	1188
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	9.7	11.5	9.7	11.0	5.7	3.4	3.0	4.9	3.9	2.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.7	0.1	0.1	0.0	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	1.9	0.1	1.7	0.1	1.4	0.4	0.8	2.7	0.0
LnGrp Delay(d),s/veh	9.7	0.0	9.7	11.9	9.7	11.6	5.7	3.4	3.0	5.1	4.0	2.8
LnGrp LOS	A		A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		26			427			700			1138	
Approach Delay, s/veh		9.7			11.7			3.4			4.2	
Approach LOS		A			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		24.7		12.4		24.7		12.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		8.5		2.2		8.7		7.1				
Green Ext Time (p_c), s		12.1		1.5		12.0		1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			5.4									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary  
2: Valencia & Golden

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	171	96	55	211	46	95	233	94	55	469	66
Future Volume (veh/h)	48	171	96	55	211	46	95	233	94	55	469	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	51	180	101	58	222	48	100	245	99	58	494	69
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	532	664	564	549	664	564	590	1275	501	708	1603	223
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1105	1863	1583	1094	1863	1583	844	2484	976	1032	3122	434
Grp Volume(v), veh/h	51	180	101	58	222	48	100	173	171	58	279	284
Grp Sat Flow(s),veh/h/ln	1105	1863	1583	1094	1863	1583	844	1770	1690	1032	1770	1786
Q Serve(g_s), s	1.1	2.1	1.3	1.2	2.7	0.6	2.4	1.6	1.7	1.0	2.8	2.8
Cycle Q Clear(g_c), s	3.8	2.1	1.3	3.3	2.7	0.6	5.2	1.6	1.7	2.7	2.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.58	1.00		0.24
Lane Grp Cap(c), veh/h	532	664	564	549	664	564	590	909	868	708	909	917
V/C Ratio(X)	0.10	0.27	0.18	0.11	0.33	0.09	0.17	0.19	0.20	0.08	0.31	0.31
Avail Cap(c_a), veh/h	1110	1638	1393	1121	1638	1393	954	1672	1597	1153	1672	1687
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	7.0	6.8	8.2	7.2	6.6	5.8	4.0	4.0	4.8	4.3	4.3
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	0.6	0.4	1.4	0.3	0.6	0.8	0.8	0.3	1.4	1.4
LnGrp Delay(d),s/veh	8.7	7.3	6.9	8.3	7.5	6.6	6.0	4.1	4.2	4.8	4.5	4.5
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		332			328			444			621	
Approach Delay, s/veh		7.4			7.5			4.6			4.5	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.8		12.9		17.8		12.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		7.2		5.8		4.8		5.3				
Green Ext Time (p_c), s		6.6		3.2		6.8		3.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				5.7								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗	↖	↖ ↗	↖ ↗	↖	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	38	1627	333	276	1449	619	278	192	165	913	663	32
Future Volume (veh/h)	38	1627	333	276	1449	619	278	192	165	913	663	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	40	1713	351	291	1525	652	293	202	174	961	698	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	1619	328	328	2175	677	365	763	341	766	1176	0
Arrive On Green	0.05	0.38	0.38	0.10	0.43	0.43	0.11	0.22	0.22	0.22	0.33	0.00
Sat Flow, veh/h	1774	4242	859	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	40	1365	699	291	1525	652	293	202	174	961	698	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1711	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	2.1	36.0	36.0	7.9	23.1	37.8	7.8	4.5	9.1	21.0	15.5	0.0
Cycle Q Clear(g_c), s	2.1	36.0	36.0	7.9	23.1	37.8	7.8	4.5	9.1	21.0	15.5	0.0
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	87	1294	653	328	2175	677	365	763	341	766	1176	0
V/C Ratio(X)	0.46	1.06	1.07	0.89	0.70	0.96	0.80	0.26	0.51	1.25	0.59	0.00
Avail Cap(c_a), veh/h	150	1294	653	328	2175	677	365	1350	604	766	1763	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.6	29.2	29.2	42.2	22.1	26.3	41.2	30.8	32.6	36.7	26.2	0.0
Incr Delay (d2), s/veh	3.7	41.0	55.5	23.9	1.0	25.6	12.2	0.2	1.2	125.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	24.1	26.9	4.9	10.9	21.3	4.4	2.2	4.1	23.2	7.6	0.0
LnGrp Delay(d),s/veh	47.3	70.2	84.7	66.1	23.1	51.9	53.4	31.0	33.8	161.8	26.7	0.0
LnGrp LOS	D	F	F	E	C	D	D	C	C	F	C	
Approach Vol, veh/h		2104			2468			669			1659	
Approach Delay, s/veh		74.6			35.8			41.5			105.0	
Approach LOS		E			D			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	38.0	12.0	33.3	6.6	42.4	23.0	22.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	34.0	8.0	45.0	6.0	35.0	19.0	34.0				
Max Q Clear Time (g_c+1.9), s	1.0	38.0	9.8	17.5	4.1	39.8	23.0	11.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	7.7	0.0	0.0	0.0	7.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				64.8								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary  
4: Placentia & Bastanchury

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	736	198	336	834	89	132	227	166	198	502	30
Future Volume (veh/h)	50	736	198	336	834	89	132	227	166	198	502	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	775	208	354	878	94	139	239	175	208	528	32
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	1254	561	310	1637	732	371	532	374	417	908	55
Arrive On Green	0.07	0.35	0.35	0.17	0.46	0.46	0.09	0.27	0.27	0.09	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1987	1398	1774	3391	205
Grp Volume(v), veh/h	53	775	208	354	878	94	139	212	202	208	275	285
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1616	1774	1770	1827
Q Serve(g_s), s	2.0	12.5	6.7	12.0	12.2	2.3	3.8	6.8	7.2	5.9	9.3	9.3
Cycle Q Clear(g_c), s	2.0	12.5	6.7	12.0	12.2	2.3	3.8	6.8	7.2	5.9	9.3	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.11
Lane Grp Cap(c), veh/h	117	1254	561	310	1637	732	371	474	433	417	474	489
V/C Ratio(X)	0.45	0.62	0.37	1.14	0.54	0.13	0.37	0.45	0.47	0.50	0.58	0.58
Avail Cap(c_a), veh/h	155	1389	622	310	1698	760	371	695	634	417	695	717
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	18.4	16.5	28.4	13.2	10.6	16.3	20.9	21.1	16.7	21.8	21.8
Incr Delay (d2), s/veh	2.7	0.7	0.4	95.9	0.3	0.1	0.6	0.7	0.8	0.9	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.2	3.0	14.0	5.9	1.0	1.9	3.4	3.3	2.9	4.7	4.8
LnGrp Delay(d),s/veh	33.6	19.1	16.9	124.3	13.5	10.6	16.9	21.6	21.9	17.6	23.0	23.0
LnGrp LOS	C	B	B	F	B	B	B	C	C	B	C	C
Approach Vol, veh/h		1036			1326			553			768	
Approach Delay, s/veh		19.4			42.9			20.5			21.5	
Approach LOS		B			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	26.4	8.0	20.4	6.5	33.8	8.0	20.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	25.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	14.5	14.5	5.8	11.3	4.0	14.2	7.9	9.2				
Green Ext Time (p_c), s	0.0	7.9	0.0	5.1	0.0	11.4	0.0	5.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					28.5							
HCM 2010 LOS					C							



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↔		↔↔↔	↑↑↑		↔↔	↑↔		↔↔↔	↑↑↑	
Traffic Volume (veh/h)	222	708	223	163	864	72	178	535	163	70	959	231
Future Volume (veh/h)	222	708	223	163	864	72	178	535	163	70	959	231
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	234	745	235	172	909	76	187	563	172	74	1009	243
Adj No. of Lanes	2	2	0	1	3	0	2	2	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	936	295	236	1806	151	250	919	280	129	1407	338
Arrive On Green	0.11	0.35	0.35	0.13	0.38	0.38	0.07	0.34	0.34	0.07	0.34	0.34
Sat Flow, veh/h	3442	2649	836	1774	4784	399	3442	2674	814	1774	4095	985
Grp Volume(v), veh/h	234	498	482	172	643	342	187	372	363	74	835	417
Grp Sat Flow(s),veh/h/ln	1721	1770	1715	1774	1695	1792	1721	1770	1719	1774	1695	1689
Q Serve(g_s), s	5.4	20.9	20.9	7.7	12.0	12.1	4.4	14.4	14.5	3.3	17.7	17.7
Cycle Q Clear(g_c), s	5.4	20.9	20.9	7.7	12.0	12.1	4.4	14.4	14.5	3.3	17.7	17.7
Prop In Lane	1.00		0.49	1.00		0.22	1.00		0.47	1.00		0.58
Lane Grp Cap(c), veh/h	375	625	606	236	1280	677	250	608	591	129	1165	581
V/C Ratio(X)	0.62	0.80	0.80	0.73	0.50	0.50	0.75	0.61	0.61	0.57	0.72	0.72
Avail Cap(c_a), veh/h	375	643	624	236	1315	695	250	643	625	129	1232	614
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	24.0	24.0	34.3	19.7	19.7	37.5	22.5	22.5	37.0	23.6	23.6
Incr Delay (d2), s/veh	3.2	6.7	6.9	10.7	0.3	0.6	11.7	1.6	1.6	6.0	1.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	11.3	11.0	4.5	5.7	6.1	2.5	7.3	7.1	1.8	8.5	8.8
LnGrp Delay(d),s/veh	38.3	30.7	30.9	45.0	20.0	20.3	49.2	24.1	24.2	43.1	25.5	27.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1214			1157			922			1326	
Approach Delay, s/veh		32.3			23.8			29.2			27.1	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	31.2	8.0	30.4	11.0	33.2	8.0	30.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	28.0	28.0	4.0	28.0	7.0	30.0	4.0	28.0				
Max Q Clear Time (g_c+1/9), s	22.9	6.4	19.7	7.4	14.1	5.3	16.5					
Green Ext Time (p_c), s	0.0	4.3	0.0	6.6	0.0	11.2	0.0	8.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				28.1								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
6: Valencia & Bastanchury

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	640	280	289	859	45	75	295	113	49	536	139
Future Volume (veh/h)	79	640	280	289	859	45	75	295	113	49	536	139
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	674	295	304	904	47	79	311	119	52	564	146
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1190	533	382	1588	83	250	912	342	361	1009	260
Arrive On Green	0.09	0.34	0.34	0.22	0.46	0.46	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	3423	178	736	2520	945	954	2786	719
Grp Volume(v), veh/h	83	674	295	304	467	484	79	217	213	52	358	352
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1831	736	1770	1696	954	1770	1736
Q Serve(g_s), s	3.1	10.9	10.6	11.3	13.4	13.4	6.7	6.2	6.4	2.9	11.2	11.3
Cycle Q Clear(g_c), s	3.1	10.9	10.6	11.3	13.4	13.4	18.0	6.2	6.4	9.3	11.2	11.3
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.56	1.00		0.41
Lane Grp Cap(c), veh/h	156	1190	533	382	821	850	250	641	614	361	641	628
V/C Ratio(X)	0.53	0.57	0.55	0.80	0.57	0.57	0.32	0.34	0.35	0.14	0.56	0.56
Avail Cap(c_a), veh/h	229	1373	614	382	839	868	269	686	658	386	686	673
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	18.9	18.8	25.8	13.6	13.6	25.0	16.1	16.2	19.6	17.8	17.8
Incr Delay (d2), s/veh	2.8	0.4	0.9	11.1	0.9	0.9	0.7	0.3	0.3	0.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.3	4.7	6.7	6.7	6.9	1.4	3.1	3.0	0.8	5.6	5.5
LnGrp Delay(d),s/veh	33.2	19.4	19.7	36.9	14.5	14.4	25.7	16.5	16.5	19.8	18.6	18.7
LnGrp LOS	C	B	B	D	B	B	C	B	B	B	B	B
Approach Vol, veh/h		1052			1255			509			762	
Approach Delay, s/veh		20.6			19.9			17.9			18.7	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	25.4		27.2	8.1	34.3		27.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	3.0	25.0		25.0	7.0	31.0		25.0				
Max Q Clear Time (g_c+I), s	13.3	12.9		13.3	5.1	15.4		20.0				
Green Ext Time (p_c), s	0.0	8.5		6.1	0.0	10.3		3.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.6								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	747	33	31	1022	28	41	30	76	45	28	17
Future Volume (veh/h)	10	747	33	31	1022	28	41	30	76	45	28	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	786	35	33	1076	29	43	32	80	47	29	18
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	472	2247	100	583	2292	62	220	95	186	310	148	69
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	508	3452	154	664	3521	95	351	416	819	639	649	305
Grp Volume(v), veh/h	11	403	418	33	541	564	155	0	0	94	0	0
Grp Sat Flow(s),veh/h/ln	508	1770	1836	664	1770	1846	1586	0	0	1593	0	0
Q Serve(g_s), s	0.4	3.4	3.4	0.8	5.1	5.1	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.4	3.4	3.4	4.2	5.1	5.1	2.7	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.05	0.28		0.52	0.50		0.19
Lane Grp Cap(c), veh/h	472	1152	1195	583	1152	1202	501	0	0	527	0	0
V/C Ratio(X)	0.02	0.35	0.35	0.06	0.47	0.47	0.31	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	558	1453	1507	695	1453	1515	1520	0	0	1491	0	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.2	2.6	2.6	3.5	2.9	2.9	10.8	0.0	0.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.0	0.3	0.3	0.3	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.1	1.6	1.7	0.1	2.5	2.6	1.3	0.0	0.0	0.7	0.0	0.0	0.0
LnGrp Delay(d),s/veh	4.3	2.8	2.8	3.6	3.2	3.2	11.2	0.0	0.0	10.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		832			1138			155			94	
Approach Delay, s/veh		2.8			3.2			11.2			10.5	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.5		23.4		9.5		23.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		4.7		7.4		3.4		7.1				
Green Ext Time (p_c), s		1.5		12.0		1.5		12.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				3.9								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
8: Bradford & Yorba Linda

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑↑ ↗			↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	20	898	66	291	1359	76	177	55	256	103	83	27
Future Volume (veh/h)	20	898	66	291	1359	76	177	55	256	103	83	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	21	945	69	306	1431	80	186	58	269	108	87	28
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	1936	141	329	2605	146	458	564	480	428	409	132
Arrive On Green	0.06	0.40	0.40	0.19	0.53	0.53	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	4838	352	1774	4929	276	1272	1863	1583	1049	1351	435
Grp Volume(v), veh/h	21	662	352	306	984	527	186	58	269	108	0	115
Grp Sat Flow(s),veh/h/ln	1774	1695	1801	1774	1695	1814	1272	1863	1583	1049	0	1786
Q Serve(g_s), s	0.6	7.8	7.9	9.2	10.4	10.4	6.9	1.2	7.7	4.5	0.0	2.6
Cycle Q Clear(g_c), s	0.6	7.8	7.9	9.2	10.4	10.4	9.5	1.2	7.7	5.7	0.0	2.6
Prop In Lane	1.00		0.20	1.00		0.15	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	101	1357	721	329	1792	959	458	564	480	428	0	541
V/C Ratio(X)	0.21	0.49	0.49	0.93	0.55	0.55	0.41	0.10	0.56	0.25	0.00	0.21
Avail Cap(c_a), veh/h	197	1509	801	329	1792	959	780	1036	881	693	0	994
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	12.0	12.1	21.6	8.4	8.4	17.5	13.5	15.8	15.6	0.0	14.0
Incr Delay (d2), s/veh	1.0	0.3	0.5	32.1	0.4	0.7	0.6	0.1	1.0	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.7	4.0	7.4	4.9	5.3	2.5	0.6	3.5	1.3	0.0	1.3
LnGrp Delay(d),s/veh	25.3	12.3	12.6	53.7	8.8	9.1	18.1	13.6	16.8	15.9	0.0	14.2
LnGrp LOS	C	B	B	D	A	A	B	B	B	B		B
Approach Vol, veh/h		1035			1817			513			223	
Approach Delay, s/veh		12.7			16.5			16.9			15.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	2.0	23.6		18.3	5.1	30.5		18.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	22.0		28.0	4.0	26.0		28.0				
Max Q Clear Time (g_c+11), s	9.9	9.9		7.7	2.6	12.4		11.5				
Green Ext Time (p_c), s	0.0	9.7		3.0	0.0	11.6		2.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				15.3								
HCM 2010 LOS				B								





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑		↔↔	↑↑↑		↔↔	↑↑	↔	↔	↑↑↑	↔
Traffic Volume (veh/h)	235	904	167	240	1202	144	228	412	191	210	974	268
Future Volume (veh/h)	235	904	167	240	1202	144	228	412	191	210	974	268
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	952	176	253	1265	152	240	434	201	221	1025	282
Adj No. of Lanes	2	3	0	1	3	0	2	2	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	1634	301	212	1757	211	247	1058	473	191	1703	530
Arrive On Green	0.12	0.38	0.38	0.12	0.38	0.38	0.07	0.30	0.30	0.11	0.33	0.33
Sat Flow, veh/h	3442	4317	796	1774	4602	553	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	247	747	381	253	932	485	240	434	201	221	1025	282
Grp Sat Flow(s),veh/h/ln	1721	1695	1722	1774	1695	1765	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	5.7	14.7	14.8	10.0	19.6	19.6	5.8	8.2	8.5	9.0	14.1	12.1
Cycle Q Clear(g_c), s	5.7	14.7	14.8	10.0	19.6	19.6	5.8	8.2	8.5	9.0	14.1	12.1
Prop In Lane	1.00		0.46	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	1283	652	212	1294	674	247	1058	473	191	1703	530
V/C Ratio(X)	0.62	0.58	0.58	1.19	0.72	0.72	0.97	0.41	0.42	1.16	0.60	0.53
Avail Cap(c_a), veh/h	411	1336	679	212	1336	696	247	1268	567	191	2005	624
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	20.7	20.8	36.9	22.1	22.1	38.8	23.4	23.6	37.4	23.2	22.5
Incr Delay (d2), s/veh	2.7	0.6	1.2	124.1	1.9	3.5	49.6	0.3	0.6	114.5	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.0	7.2	12.1	9.5	10.2	4.4	4.0	3.8	10.4	6.6	5.3
LnGrp Delay(d),s/veh	37.9	21.3	22.0	160.9	23.9	25.6	88.4	23.7	24.2	151.8	23.6	23.4
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1375			1670			875			1528	
Approach Delay, s/veh		24.5			45.2			41.5			42.1	
Approach LOS		C			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.0	33.7	8.0	30.0	11.7	34.0	11.0	27.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	31.0	4.0	31.0	8.0	31.0	7.0	28.0				
Max Q Clear Time (g_c+11.2), s	11.2	16.8	7.8	16.1	7.7	21.6	11.0	10.5				
Green Ext Time (p_c), s	0.0	12.1	0.0	10.0	0.0	8.3	0.0	11.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			38.5									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis  
 10: Palm & Yorba Linda

2040 Base AM  
 07/12/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	1013	285	78	1299	278	41
Future Volume (vph)	1013	285	78	1299	278	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0		2.0	2.0	2.0	
Lane Util. Factor	0.91		1.00	0.95	0.97	
Frt	0.97		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	4918		1770	3539	3396	
Flt Permitted	1.00		0.17	1.00	0.96	
Satd. Flow (perm)	4918		317	3539	3396	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1066	300	82	1367	293	43
RTOR Reduction (vph)	78	0	0	0	30	0
Lane Group Flow (vph)	1288	0	82	1367	306	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	6	
Permitted Phases			8		6	
Actuated Green, G (s)	21.5		21.5	21.5	8.7	
Effective Green, g (s)	23.5		23.5	23.5	10.7	
Actuated g/C Ratio	0.62		0.62	0.62	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3025		195	2177	951	
v/s Ratio Prot	0.26			c0.39	c0.09	
v/s Ratio Perm			0.26			
v/c Ratio	0.43		0.42	0.63	0.32	
Uniform Delay, d1	3.8		3.8	4.6	10.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1		1.5	0.6	0.2	
Delay (s)	3.9		5.3	5.2	11.1	
Level of Service	A		A	A	B	
Approach Delay (s)	3.9			5.2	11.1	
Approach LOS	A			A	B	

Intersection Summary

HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	38.2	Sum of lost time (s)	4.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 11: Valencia & Yorba Linda

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	704	31	41	831	165	50	330	64	160	364	456
Future Volume (veh/h)	261	704	31	41	831	165	50	330	64	160	364	456
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	275	741	33	43	875	174	53	347	67	168	383	480
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1464	655	112	1313	564	227	1284	245	454	766	685
Arrive On Green	0.11	0.41	0.41	0.06	0.37	0.37	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	638	2966	567	968	1770	1583
Grp Volume(v), veh/h	275	741	33	43	875	174	53	206	208	168	383	480
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	638	1770	1763	968	1770	1583
Q Serve(g_s), s	7.0	10.3	0.8	1.5	13.7	5.4	4.9	4.9	5.0	9.0	10.4	16.4
Cycle Q Clear(g_c), s	7.0	10.3	0.8	1.5	13.7	5.4	21.2	4.9	5.0	14.0	10.4	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	187	1464	655	112	1313	564	227	766	763	454	766	685
V/C Ratio(X)	1.47	0.51	0.05	0.38	0.67	0.31	0.23	0.27	0.27	0.37	0.50	0.70
Avail Cap(c_a), veh/h	187	1495	669	161	1441	619	240	801	798	473	801	716
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	14.4	11.6	29.8	17.4	14.8	24.0	12.1	12.1	16.6	13.6	15.3
Incr Delay (d2), s/veh	237.4	0.3	0.0	2.1	1.0	0.3	0.5	0.2	0.2	0.5	0.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ft	5.7	5.0	0.4	0.8	6.9	2.3	0.9	2.4	2.5	2.4	5.1	7.6
LnGrp Delay(d),s/veh	267.0	14.7	11.7	32.0	18.5	15.1	24.5	12.3	12.3	17.1	14.1	18.2
LnGrp LOS	F	B	B	C	B	B	C	B	B	B	B	B
Approach Vol, veh/h		1049			1092			467			1031	
Approach Delay, s/veh		80.8			18.5			13.7			16.5	
Approach LOS		F			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	29.4		30.7	9.0	26.6		30.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	26.0		28.0	5.0	25.0		28.0				
Max Q Clear Time (g_c+1), s	13.5	12.3		18.4	9.0	15.7		23.2				
Green Ext Time (p_c), s	0.0	9.4		6.2	0.0	6.9		3.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				35.2								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary  
 12: Rose & Yorba Linda

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	610	72	286	738	166	102	522	156	145	1052	106
Future Volume (veh/h)	111	610	72	286	738	166	102	522	156	145	1052	106
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1788	1863	1863	1863
Adj Flow Rate, veh/h	117	642	76	301	777	175	107	549	164	153	1107	112
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	1101	473	311	1343	577	133	1197	514	133	1197	536
Arrive On Green	0.11	0.31	0.31	0.18	0.38	0.38	0.08	0.34	0.34	0.08	0.34	0.34
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3539	1520	1774	3539	1583
Grp Volume(v), veh/h	117	642	76	301	777	175	107	549	164	153	1107	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1770	1520	1774	1770	1583
Q Serve(g_s), s	5.0	12.2	2.9	13.5	13.9	6.4	4.7	9.7	6.4	6.0	24.0	4.0
Cycle Q Clear(g_c), s	5.0	12.2	2.9	13.5	13.9	6.4	4.7	9.7	6.4	6.0	24.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	1101	473	311	1343	577	133	1197	514	133	1197	536
V/C Ratio(X)	0.62	0.58	0.16	0.97	0.58	0.30	0.80	0.46	0.32	1.15	0.92	0.21
Avail Cap(c_a), veh/h	222	1330	571	311	1508	647	133	1197	514	133	1197	536
HCM 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
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	23.1	19.9	32.7	19.7	17.4	36.3	20.7	19.6	36.9	25.4	18.8
Incr Delay (d2), s/veh	3.9	0.5	0.2	42.1	0.4	0.3	28.6	0.3	0.4	123.0	12.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.0	1.2	10.2	6.9	2.7	3.4	4.8	2.7	7.4	13.7	1.8
LnGrp Delay(d),s/veh	37.9	23.6	20.1	74.8	20.1	17.7	64.9	21.0	19.9	159.9	37.5	19.0
LnGrp LOS	D	C	C	E	C	B	E	C	B	F	D	B
Approach Vol, veh/h		835			1253			820			1372	
Approach Delay, s/veh		25.3			32.9			26.5			49.6	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	26.8	8.0	29.0	10.5	32.3	8.0	29.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	2.0	28.0	4.0	25.0	8.0	32.0	4.0	25.0				
Max Q Clear Time (g_c+11.5), s	11.5	14.2	6.7	26.0	7.0	15.9	8.0	11.7				
Green Ext Time (p_c), s	0.0	8.6	0.0	0.0	0.0	9.6	0.0	9.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			35.6									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary  
13: Kraemer & Morse

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	26	54	12	277	23	132	3	723	194	65	1347	16
Future Volume (veh/h)	26	54	12	277	23	132	3	723	194	65	1347	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	57	13	292	24	139	3	761	204	68	1418	17
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	127	767	112	0	767	63	1199	536	142	1356	607
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.04	0.34	0.34	0.08	0.38	0.38
Sat Flow, veh/h	0	261	1583	0	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	84	0	13	316	0	139	3	761	204	68	1418	17
Grp Sat Flow(s),veh/h/ln	261	0	1583	0	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.3	0.0	0.0	3.1	0.1	11.2	6.1	2.3	23.7	0.4
Cycle Q Clear(g_c), s	30.0	0.0	0.3	30.0	0.0	3.1	0.1	11.2	6.1	2.3	23.7	0.4
Prop In Lane	0.32		1.00	0.92		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	767	112	0	767	63	1199	536	142	1356	607
V/C Ratio(X)	0.41	0.00	0.02	2.82	0.00	0.18	0.05	0.63	0.38	0.48	1.05	0.03
Avail Cap(c_a), veh/h	203	0	767	112	0	767	172	1315	588	172	1356	607
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	8.3	31.0	0.0	9.0	28.8	17.2	15.5	27.3	19.1	11.9
Incr Delay (d2), s/veh	1.3	0.0	0.0	845.4	0.0	0.1	0.3	0.9	0.4	2.5	37.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.1	28.2	0.0	1.3	0.1	5.5	2.7	1.2	18.5	0.2
LnGrp Delay(d),s/veh	15.3	0.0	8.3	876.4	0.0	9.1	29.2	18.1	16.0	29.8	56.5	11.9
LnGrp LOS	B		A	F		A	C	B	B	C	F	B
Approach Vol, veh/h		97			455			968			1503	
Approach Delay, s/veh		14.4			611.4			17.7			54.8	
Approach LOS		B			F			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	4.2	25.7		32.0	6.9	23.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		32.0	2.1	25.7		32.0	4.3	13.2				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	5.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			125.4									
HCM 2010 LOS			F									

**Intersection**

Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕				↕		↵	↕	↵
Traffic Vol, veh/h	72	428	18	25	308	146	0	6	39	18	239	37	62
Future Vol, veh/h	72	428	18	25	308	146	0	6	39	18	239	37	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	451	19	26	324	154	0	6	41	19	252	39	65
Number of Lanes	1	2	0	1	2	0	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	3	3
HCM Control Delay	19	17.5	13.1	18
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	10%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	62%	0%	100%	89%	0%	100%	41%	0%	100%	0%
Vol Right, %	29%	0%	0%	11%	0%	0%	59%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	63	72	285	161	25	205	249	239	37	62
LT Vol	6	72	0	0	25	0	0	239	0	0
Through Vol	39	0	285	143	0	205	103	0	37	0
RT Vol	18	0	0	18	0	0	146	0	0	62
Lane Flow Rate	66	76	300	169	26	216	262	252	39	65
Geometry Grp	8	8	8	8	8	8	8	7	7	7
Degree of Util (X)	0.16	0.172	0.64	0.356	0.061	0.467	0.535	0.566	0.082	0.125
Departure Headway (Hd)	8.682	8.177	7.666	7.586	8.294	7.783	7.362	8.104	7.598	6.89
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	412	438	472	474	431	463	489	445	471	519
Service Time	6.457	5.935	5.424	5.343	6.052	5.54	5.12	5.856	5.35	4.641
HCM Lane V/C Ratio	0.16	0.174	0.636	0.357	0.06	0.467	0.536	0.566	0.083	0.125
HCM Control Delay	13.1	12.6	23.2	14.5	11.6	17.2	18.3	21	11	10.6
HCM Lane LOS	B	B	C	B	B	C	C	C	B	B
HCM 95th-tile Q	0.6	0.6	4.4	1.6	0.2	2.4	3.1	3.4	0.3	0.4

HCM 2010 Signalized Intersection Summary  
15: Rose & Palm

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	2	635	15	12	9	347	833	7	4	1360	58
Future Volume (veh/h)	60	2	635	15	12	9	347	833	7	4	1360	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	63	2	668	16	13	9	365	877	7	4	1432	61
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	559	657	913	257	191	536	397	1942	834	49	1249	536
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.22	0.55	0.55	0.03	0.35	0.35
Sat Flow, veh/h	1384	1863	1583	542	541	1520	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	63	2	668	29	0	9	365	877	7	4	1432	61
Grp Sat Flow(s),veh/h/ln	1384	1863	1583	1083	0	1520	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	2.7	0.1	26.3	0.0	0.0	0.3	17.1	12.6	0.2	0.2	30.0	2.3
Cycle Q Clear(g_c), s	3.5	0.1	26.3	0.9	0.0	0.3	17.1	12.6	0.2	0.2	30.0	2.3
Prop In Lane	1.00		1.00	0.55		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	559	657	913	448	0	536	397	1942	834	49	1249	536
V/C Ratio(X)	0.11	0.00	0.73	0.06	0.00	0.02	0.92	0.45	0.01	0.08	1.15	0.11
Avail Cap(c_a), veh/h	559	657	913	448	0	536	397	1942	834	125	1249	536
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	17.8	13.2	18.1	0.0	17.9	32.3	11.5	8.7	40.3	27.5	18.5
Incr Delay (d2), s/veh	0.1	0.0	3.0	0.1	0.0	0.0	26.4	0.2	0.0	0.7	75.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	12.1	0.5	0.0	0.1	11.2	6.1	0.1	0.1	27.7	1.0
LnGrp Delay(d),s/veh	19.3	17.8	16.2	18.1	0.0	17.9	58.7	11.7	8.7	41.0	103.2	18.6
LnGrp LOS	B	B	B	B		B	E	B	A	D	F	B
Approach Vol, veh/h		733			38			1249			1497	
Approach Delay, s/veh		16.5			18.1			25.4			99.6	
Approach LOS		B			B			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	21.0	32.0		32.0	4.4	48.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		28.3	19.1	32.0		2.9	2.2	14.6				
Green Ext Time (p_c), s		0.0	0.0	0.0		3.3	0.0	20.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			55.0									
HCM 2010 LOS			E									

HCM 2010 Signalized Intersection Summary  
 16: Bradford & Madison

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	123	107	295	151	70	69	291	220	86	344	91
Future Volume (veh/h)	97	123	107	295	151	70	69	291	220	86	344	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	102	129	113	311	159	74	73	306	232	91	362	96
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	362	295	646	523	445	500	635	540	517	648	529
Arrive On Green	0.11	0.19	0.19	0.19	0.28	0.28	0.10	0.34	0.34	0.10	0.35	0.35
Sat Flow, veh/h	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Grp Volume(v), veh/h	102	129	113	311	159	74	73	306	232	91	362	96
Grp Sat Flow(s),veh/h/ln	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Q Serve(g_s), s	2.0	2.8	3.0	5.7	3.1	1.7	1.1	6.1	5.3	1.4	7.4	2.1
Cycle Q Clear(g_c), s	2.0	2.8	3.0	5.7	3.1	1.7	1.1	6.1	5.3	1.4	7.4	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	362	295	646	523	445	500	635	540	517	648	529
V/C Ratio(X)	0.18	0.36	0.38	0.48	0.30	0.17	0.15	0.48	0.43	0.18	0.56	0.18
Avail Cap(c_a), veh/h	603	954	778	646	1073	912	558	1113	946	563	1113	908
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	16.3	16.4	9.6	13.3	12.7	8.3	12.2	11.9	8.0	12.4	10.6
Incr Delay (d2), s/veh	0.2	0.6	0.8	0.6	0.3	0.2	0.1	0.6	0.5	0.2	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.5	1.3	2.8	1.6	0.7	0.5	3.2	2.4	0.7	3.9	0.9
LnGrp Delay(d),s/veh	12.3	16.9	17.3	10.2	13.6	12.9	8.5	12.7	12.5	8.1	13.1	10.8
LnGrp LOS	B	B	B	B	B	B	A	B	B	A	B	B
Approach Vol, veh/h		344			544			611			549	
Approach Delay, s/veh		15.7			11.5			12.1			11.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	18.0	11.0	11.1	6.5	18.3	6.9	15.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	7.0	22.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	4.0	8.1	7.7	5.0	3.1	9.4	4.0	5.1				
Green Ext Time (p_c), s	0.0	5.1	0.0	2.1	0.0	4.9	0.0	2.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.5								
HCM 2010 LOS				B								



HCM 2010 Signalized Intersection Summary  
 17: Kraemer & Madison

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	16	326	18	101	60	264	737	4	18	1447	216
Future Volume (veh/h)	121	16	326	18	101	60	264	737	4	18	1447	216
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1900	1863	1863	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	127	17	343	19	106	63	278	776	4	19	1523	227
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	453	595	486	115	518	506	331	1849	794	488	1667	716
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.10	0.52	0.52	0.05	0.47	0.47
Sat Flow, veh/h	1211	1863	1520	132	1621	1583	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	127	17	343	125	0	63	278	776	4	19	1523	227
Grp Sat Flow(s),veh/h/ln	1211	1863	1520	1753	0	1583	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	4.9	0.4	11.4	0.0	0.0	1.6	4.1	7.7	0.1	0.3	22.9	5.3
Cycle Q Clear(g_c), s	7.7	0.4	11.4	2.8	0.0	1.6	4.1	7.7	0.1	0.3	22.9	5.3
Prop In Lane	1.00		1.00	0.15		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	453	595	486	633	0	506	331	1849	794	488	1667	716
V/C Ratio(X)	0.28	0.03	0.71	0.20	0.00	0.12	0.84	0.42	0.01	0.04	0.91	0.32
Avail Cap(c_a), veh/h	1992	2961	2416	2733	0	2516	331	1849	794	580	1669	717
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	13.4	17.1	14.2	0.0	13.8	12.3	8.4	6.5	6.8	14.1	9.4
Incr Delay (d2), s/veh	0.3	0.0	1.9	0.2	0.0	0.1	17.2	0.2	0.0	0.0	8.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.2	5.0	1.5	0.0	0.7	3.8	3.7	0.0	0.1	12.9	2.3
LnGrp Delay(d),s/veh	17.3	13.4	19.0	14.4	0.0	13.9	29.5	8.5	6.5	6.8	22.2	9.7
LnGrp LOS	B	B	B	B		B	C	A	A	A	C	A
Approach Vol, veh/h		487			188			1058			1769	
Approach Delay, s/veh		18.4			14.2			14.0			20.5	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.3	8.0	29.0		20.3	5.0	31.9				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		89.0	4.0	25.0		89.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s		13.4	6.1	24.9		4.8	2.3	9.7				
Green Ext Time (p_c), s		2.9	0.0	0.1		2.9	0.0	13.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				17.9								
HCM 2010 LOS				B								



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	346	264	918	191	163	1878		
Future Volume (veh/h)	346	264	918	191	163	1878		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1788	1863	1863		
Adj Flow Rate, veh/h	364	278	966	201	172	1977		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	490	438	1685	724	273	2340		
Arrive On Green	0.28	0.28	0.48	0.48	0.15	0.66		
Sat Flow, veh/h	1774	1583	3632	1520	1774	3632		
Grp Volume(v), veh/h	364	278	966	201	172	1977		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1520	1774	1770		
Q Serve(g_s), s	12.0	9.9	12.6	5.1	5.8	27.5		
Cycle Q Clear(g_c), s	12.0	9.9	12.6	5.1	5.8	27.5		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	490	438	1685	724	273	2340		
V/C Ratio(X)	0.74	0.64	0.57	0.28	0.63	0.84		
Avail Cap(c_a), veh/h	748	668	1685	724	748	2709		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	21.1	20.3	12.1	10.1	25.4	8.3		
Incr Delay (d2), s/veh	2.2	1.5	0.5	0.2	2.4	2.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.2	0.2	6.1	2.2	3.0	13.7		
LnGrp Delay(d),s/veh	23.3	21.9	12.6	10.3	27.8	10.7		
LnGrp LOS	C	C	B	B	C	B		
Approach Vol, veh/h	642		1167			2149		
Approach Delay, s/veh	22.7		12.2			12.0		
Approach LOS	C		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.3		19.7	11.8	32.5
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				47.0		25.0	25.0	18.0
Max Q Clear Time (g_c+I1), s				29.5		14.0	7.8	14.6
Green Ext Time (p_c), s				10.9		1.7	0.4	3.3
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			13.8					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis  
19: Placentia & Nutwood

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔		↔	↕		↔	↕	
Traffic Volume (vph)	136	19	123	84	181	5	130	385	74	3	789	613
Future Volume (vph)	136	19	123	84	181	5	130	385	74	3	789	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	0.93	
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1705	1583	1770	1856		1770	3453		1770	3307	
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.14	1.00		0.46	1.00	
Satd. Flow (perm)	1681	1705	1583	1770	1856		254	3453		855	3307	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	143	20	129	88	191	5	137	405	78	3	831	645
RTOR Reduction (vph)	0	0	111	0	2	0	0	30	0	0	250	0
Lane Group Flow (vph)	82	81	18	88	194	0	137	453	0	3	1226	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	5	5		1	1			8				4
Permitted Phases			5				8			4		
Actuated Green, G (s)	4.5	4.5	4.5	4.1	4.1		27.3	27.3		27.3	27.3	
Effective Green, g (s)	6.5	6.5	6.5	6.1	6.1		29.3	29.3		29.3	29.3	
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13		0.61	0.61		0.61	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	231	214	225	236		155	2112		522	2022	
v/s Ratio Prot	c0.05	0.05		0.05	c0.10			0.13			0.37	
v/s Ratio Perm			0.01				c0.54			0.00		
v/c Ratio	0.36	0.35	0.08	0.39	0.82		0.88	0.21		0.01	0.61	
Uniform Delay, d1	18.8	18.8	18.1	19.2	20.4		7.9	4.2		3.6	5.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.9	0.2	1.1	20.2		40.3	0.1		0.0	0.5	
Delay (s)	19.8	19.7	18.3	20.3	40.5		48.2	4.2		3.6	6.3	
Level of Service	B	B	B	C	D		D	A		A	A	
Approach Delay (s)		19.1			34.3			13.9			6.3	
Approach LOS		B			C			B			A	

Intersection Summary

HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	225	51	170	192	358	35	528	106	255	1314	220
Future Volume (veh/h)	141	225	51	170	192	358	35	528	106	255	1314	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	148	237	54	179	202	377	37	556	112	268	1383	232
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	547	125	366	693	589	97	1531	685	208	1753	753
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.05	0.43	0.43	0.12	0.50	0.50
Sat Flow, veh/h	831	1469	335	1084	1863	1583	1774	3539	1583	1774	3539	1520
Grp Volume(v), veh/h	148	0	291	179	202	377	37	556	112	268	1383	232
Grp Sat Flow(s),veh/h/ln	831	0	1804	1084	1863	1583	1774	1770	1583	1774	1770	1520
Q Serve(g_s), s	11.7	0.0	9.3	11.4	5.9	15.1	1.5	8.1	3.3	9.0	24.9	7.0
Cycle Q Clear(g_c), s	17.6	0.0	9.3	20.7	5.9	15.1	1.5	8.1	3.3	9.0	24.9	7.0
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	0	671	366	693	589	97	1531	685	208	1753	753
V/C Ratio(X)	0.44	0.00	0.43	0.49	0.29	0.64	0.38	0.36	0.16	1.29	0.79	0.31
Avail Cap(c_a), veh/h	387	0	774	428	799	679	138	1703	762	208	1841	791
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	18.1	25.8	17.0	19.9	35.1	14.7	13.3	33.9	16.1	11.6
Incr Delay (d2), s/veh	0.9	0.0	0.4	1.0	0.2	1.6	2.5	0.1	0.1	161.9	2.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	4.7	3.5	3.1	6.8	0.8	4.0	1.5	13.7	12.7	2.9
LnGrp Delay(d),s/veh	24.1	0.0	18.5	26.8	17.2	21.5	37.6	14.8	13.4	195.9	18.4	11.8
LnGrp LOS	C		B	C	B	C	D	B	B	F	B	B
Approach Vol, veh/h		439			758			705			1883	
Approach Delay, s/veh		20.4			21.6			15.8			42.8	
Approach LOS		C			C			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.6	6.2	40.1		30.6	11.0	35.3				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		31.0	4.0	38.0		31.0	7.0	35.0				
Max Q Clear Time (g_c+I1), s		19.6	3.5	26.9		22.7	11.0	10.1				
Green Ext Time (p_c), s		4.8	0.0	9.2		4.0	0.0	17.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
 21: Rose & Alta Vista

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	343	258	122	302	137	94	638	14	194	1548	342
Future Volume (veh/h)	298	343	258	122	302	137	94	638	14	194	1548	342
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	314	361	272	128	318	144	99	672	15	204	1629	360
Adj No. of Lanes	1	2	0	1	2	0	2	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	637	473	211	680	302	274	1769	39	305	1804	562
Arrive On Green	0.16	0.33	0.33	0.12	0.29	0.29	0.08	0.35	0.35	0.09	0.35	0.35
Sat Flow, veh/h	1774	1939	1439	1774	2387	1059	3442	5119	114	3442	5085	1583
Grp Volume(v), veh/h	314	329	304	128	234	228	99	445	242	204	1629	360
Grp Sat Flow(s),veh/h/ln	1774	1770	1609	1774	1770	1676	1721	1695	1843	1721	1695	1583
Q Serve(g_s), s	11.0	10.4	10.6	4.6	7.4	7.6	1.8	6.7	6.7	3.9	20.6	12.8
Cycle Q Clear(g_c), s	11.0	10.4	10.6	4.6	7.4	7.6	1.8	6.7	6.7	3.9	20.6	12.8
Prop In Lane	1.00		0.89	1.00		0.63	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	288	582	529	211	504	478	274	1171	637	305	1804	562
V/C Ratio(X)	1.09	0.57	0.58	0.61	0.46	0.48	0.36	0.38	0.38	0.67	0.90	0.64
Avail Cap(c_a), veh/h	288	994	904	236	942	892	305	1203	654	305	1804	562
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	18.7	18.8	28.3	19.9	20.0	29.5	16.7	16.7	29.9	20.7	18.2
Incr Delay (d2), s/veh	78.7	0.9	1.0	3.6	0.7	0.7	0.8	0.2	0.4	5.5	6.8	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.2	4.8	2.5	3.7	3.6	0.9	3.1	3.4	2.1	10.6	6.0
LnGrp Delay(d),s/veh	107.1	19.6	19.8	31.9	20.6	20.8	30.3	16.9	17.1	35.4	27.5	20.7
LnGrp LOS	F	B	B	C	C	C	C	B	B	D	C	C
Approach Vol, veh/h		947			590			786			2193	
Approach Delay, s/veh		48.7			23.1			18.6			27.2	
Approach LOS		D			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	24.2	7.4	26.0	13.0	21.3	8.0	25.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	36.0	36.0	4.0	22.0	9.0	34.0	4.0	22.0				
Max Q Clear Time (g_c+10), s	11.6	12.6	3.8	22.6	13.0	9.6	5.9	8.7				
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	7.7	0.0	11.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				29.7								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
 22: Jefferson & Alta Vista

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	24	304	233	116	321	7	107	11	46	6	57	55
Future Volume (veh/h)	24	304	233	116	321	7	107	11	46	6	57	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	25	320	245	122	338	7	113	12	48	6	60	58
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	813	609	257	1702	35	501	467	397	549	453	389
Arrive On Green	0.09	0.42	0.42	0.14	0.48	0.48	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1774	1931	1446	1774	3546	73	1269	1863	1583	1337	1806	1552
Grp Volume(v), veh/h	25	293	272	122	168	177	113	12	48	6	59	59
Grp Sat Flow(s),veh/h/ln	1774	1770	1608	1774	1770	1850	1269	1863	1583	1337	1770	1589
Q Serve(g_s), s	0.4	3.8	3.9	2.1	1.8	1.8	2.5	0.2	0.8	0.1	0.8	1.0
Cycle Q Clear(g_c), s	0.4	3.8	3.9	2.1	1.8	1.8	3.4	0.2	0.8	0.3	0.8	1.0
Prop In Lane	1.00		0.90	1.00		0.04	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	153	745	677	257	849	888	501	467	397	549	443	398
V/C Ratio(X)	0.16	0.39	0.40	0.47	0.20	0.20	0.23	0.03	0.12	0.01	0.13	0.15
Avail Cap(c_a), veh/h	326	1624	1475	380	1678	1754	1231	1539	1308	1318	1462	1312
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	6.6	6.6	12.8	4.9	4.9	10.9	9.2	9.5	9.3	9.5	9.5
Incr Delay (d2), s/veh	0.5	0.3	0.4	1.4	0.1	0.1	0.2	0.0	0.1	0.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.9	1.7	1.1	0.9	0.9	0.9	0.1	0.3	0.0	0.4	0.4
LnGrp Delay(d),s/veh	14.3	6.9	7.0	14.2	5.0	5.0	11.1	9.3	9.6	9.3	9.6	9.7
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		590			467			173			124	
Approach Delay, s/veh		7.3			7.4			10.6			9.7	
Approach LOS		A			A			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	15.8		10.2	4.8	17.7		10.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	28.0		25.0	4.0	29.0		25.0				
Max Q Clear Time (g_c+1/4), s	5.0	5.9		3.0	2.4	3.8		5.4				
Green Ext Time (p_c), s	0.0	5.9		1.2	0.0	6.1		1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.9								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
 23: Placentia & Chapman

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑↑	↗	↖	↑↑	↗	↔	↑↑		↖	↑↑	
Traffic Volume (veh/h)	155	612	187	128	732	80	291	361	147	135	678	172
Future Volume (veh/h)	155	612	187	128	732	80	291	361	147	135	678	172
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	644	197	135	771	84	306	380	155	142	714	181
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	1116	684	207	1193	534	402	838	337	220	972	246
Arrive On Green	0.10	0.32	0.32	0.12	0.34	0.34	0.12	0.34	0.34	0.12	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	3442	2465	992	1774	2798	709
Grp Volume(v), veh/h	163	644	197	135	771	84	306	271	264	142	451	444
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1721	1770	1688	1774	1770	1738
Q Serve(g_s), s	3.5	11.7	6.2	5.6	14.2	2.9	6.6	9.2	9.4	5.9	17.2	17.2
Cycle Q Clear(g_c), s	3.5	11.7	6.2	5.6	14.2	2.9	6.6	9.2	9.4	5.9	17.2	17.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		0.41
Lane Grp Cap(c), veh/h	327	1116	684	207	1193	534	402	602	574	220	615	603
V/C Ratio(X)	0.50	0.58	0.29	0.65	0.65	0.16	0.76	0.45	0.46	0.65	0.73	0.74
Avail Cap(c_a), veh/h	357	1332	781	207	1378	617	402	620	591	276	689	677
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	22.1	14.2	32.5	21.6	17.9	33.0	19.8	19.9	32.1	22.0	22.0
Incr Delay (d2), s/veh	1.2	0.5	0.2	7.0	0.8	0.1	8.3	0.5	0.6	3.5	3.6	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.8	2.8	3.1	7.1	1.3	3.6	4.5	4.5	3.1	9.0	8.9
LnGrp Delay(d),s/veh	34.3	22.6	14.4	39.6	22.5	18.0	41.3	20.3	20.5	35.6	25.7	25.7
LnGrp LOS	C	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1004			990			841			1037	
Approach Delay, s/veh		22.9			24.4			28.0			27.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	26.3	11.0	28.8	9.3	28.0	11.6	28.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	27.0	7.0	28.0	6.0	28.0	10.0	25.0				
Max Q Clear Time (g_c+11), s	7.0	13.7	8.6	19.2	5.5	16.2	7.9	11.4				
Green Ext Time (p_c), s	0.0	8.4	0.0	5.5	0.0	7.7	0.1	7.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				25.5								
HCM 2010 LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	220	543	20	85	797	195	25	300	54	101	220	268
Future Volume (veh/h)	220	543	20	85	797	195	25	300	54	101	220	268
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	232	572	21	89	839	205	26	316	57	106	232	282
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	332	1697	62	171	1120	273	313	944	168	356	586	498
Arrive On Green	0.19	0.49	0.49	0.10	0.40	0.40	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1774	3482	128	1774	2821	689	883	3002	535	1005	1863	1583
Grp Volume(v), veh/h	232	290	303	89	526	518	26	185	188	106	232	282
Grp Sat Flow(s),veh/h/ln	1774	1770	1840	1774	1770	1741	883	1770	1768	1005	1863	1583
Q Serve(g_s), s	7.2	6.0	6.0	2.8	15.1	15.1	1.4	4.7	4.8	5.4	5.8	8.8
Cycle Q Clear(g_c), s	7.2	6.0	6.0	2.8	15.1	15.1	7.2	4.7	4.8	10.2	5.8	8.8
Prop In Lane	1.00		0.07	1.00		0.40	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	332	863	897	171	702	691	313	557	556	356	586	498
V/C Ratio(X)	0.70	0.34	0.34	0.52	0.75	0.75	0.08	0.33	0.34	0.30	0.40	0.57
Avail Cap(c_a), veh/h	360	867	901	240	747	735	438	807	806	498	850	722
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	9.3	9.3	25.4	15.3	15.3	18.7	15.5	15.6	19.5	15.9	16.9
Incr Delay (d2), s/veh	5.3	0.2	0.2	2.4	4.0	4.0	0.1	0.3	0.4	0.5	0.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.0	3.1	1.5	8.1	8.0	0.3	2.4	2.4	1.5	3.0	3.9
LnGrp Delay(d),s/veh	27.8	9.5	9.5	27.9	19.3	19.4	18.8	15.9	15.9	19.9	16.3	17.9
LnGrp LOS	C	A	A	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		825			1133			399			620	
Approach Delay, s/veh		14.7			20.0			16.1			17.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	30.9		20.6	13.1	25.5		20.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	27.0		25.0	10.0	23.0		25.0				
Max Q Clear Time (g_c+14), s	14.8	8.0		12.2	9.2	17.1		9.2				
Green Ext Time (p_c), s	0.0	10.7		4.4	0.1	4.4		4.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				17.5								
HCM 2010 LOS				B								



HCM 2010 Signalized Intersection Summary  
25: Kraemer & Chapman

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	428	315	191	554	70	225	385	147	67	1162	216
Future Volume (veh/h)	178	428	315	191	554	70	225	385	147	67	1162	216
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	187	451	332	201	583	74	237	405	155	71	1223	227
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1167	501	183	1121	482	160	1422	520	135	1608	299
Arrive On Green	0.12	0.33	0.33	0.10	0.32	0.32	0.09	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3673	1343	1774	4311	800
Grp Volume(v), veh/h	187	451	332	201	583	74	237	372	188	71	962	488
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1626	1774	1695	1722
Q Serve(g_s), s	8.1	7.6	14.5	8.0	10.4	2.7	7.0	5.8	6.2	3.0	19.2	19.2
Cycle Q Clear(g_c), s	8.1	7.6	14.5	8.0	10.4	2.7	7.0	5.8	6.2	3.0	19.2	19.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.46
Lane Grp Cap(c), veh/h	206	1167	501	183	1121	482	160	1313	630	135	1265	642
V/C Ratio(X)	0.91	0.39	0.66	1.10	0.52	0.15	1.48	0.28	0.30	0.53	0.76	0.76
Avail Cap(c_a), veh/h	206	1464	629	183	1418	609	160	1358	651	138	1314	667
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	19.9	22.2	34.7	21.6	19.0	35.2	16.3	16.4	34.4	21.2	21.2
Incr Delay (d2), s/veh	37.9	0.2	1.8	94.4	0.4	0.1	244.9	0.1	0.3	3.5	2.6	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.7	6.3	8.7	5.2	1.1	14.3	2.8	2.8	1.6	9.4	10.0
LnGrp Delay(d),s/veh	71.7	20.1	24.0	129.1	22.0	19.1	280.1	16.4	16.7	37.9	23.8	26.2
LnGrp LOS	E	C	C	F	C	B	F	B	B	D	C	C
Approach Vol, veh/h		970			858			797			1521	
Approach Delay, s/veh		31.4			46.8			94.9			25.2	
Approach LOS		C			D			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	27.5	9.0	30.9	11.0	26.5	7.9	32.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	0.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+110), s	0.0	16.5	9.0	21.2	10.1	12.4	5.0	8.2				
Green Ext Time (p_c), s	0.0	7.0	0.0	5.7	0.0	7.9	0.0	14.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				44.5								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary  
26: Placentia & Crowther

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	33	36	165	56	133	53	638	164	237	719	77
Future Volume (veh/h)	64	33	36	165	56	133	53	638	164	237	719	77
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	67	35	38	174	59	140	56	672	173	249	757	81
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	215	234	447	491	417	511	1833	471	499	2326	1041
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1179	818	888	1322	1863	1583	653	2788	717	649	3539	1583
Grp Volume(v), veh/h	67	0	73	174	59	140	56	426	419	249	757	81
Grp Sat Flow(s),veh/h/ln	1179	0	1706	1322	1863	1583	653	1770	1736	649	1770	1583
Q Serve(g_s), s	2.3	0.0	1.7	5.9	1.2	3.6	2.1	5.5	5.5	14.2	4.7	0.9
Cycle Q Clear(g_c), s	3.5	0.0	1.7	7.5	1.2	3.6	6.8	5.5	5.5	19.6	4.7	0.9
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	425	0	449	447	491	417	511	1163	1141	499	2326	1041
V/C Ratio(X)	0.16	0.00	0.16	0.39	0.12	0.34	0.11	0.37	0.37	0.50	0.33	0.08
Avail Cap(c_a), veh/h	700	0	847	755	925	786	549	1265	1241	536	2530	1132
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	0.0	14.3	17.2	14.1	15.0	5.2	3.9	3.9	8.3	3.8	3.1
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.6	0.1	0.5	0.1	0.2	0.2	0.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8	2.2	0.6	1.6	0.4	2.7	2.6	2.6	2.2	0.4
LnGrp Delay(d),s/veh	15.6	0.0	14.4	17.7	14.2	15.5	5.3	4.1	4.1	9.1	3.8	3.1
LnGrp LOS	B		B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		140			373			901			1087	
Approach Delay, s/veh		15.0			16.3			4.2			5.0	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.1		15.3		35.1		15.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		8.8		5.5		21.6		9.5				
Green Ext Time (p_c), s		16.1		1.9		9.5		1.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				6.9								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
 27: Melrose & Crowther

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	170	201	102	274	16	87	367	99	28	507	68
Future Volume (veh/h)	6	170	201	102	274	16	87	367	99	28	507	68
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	179	212	107	288	17	92	386	104	29	534	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	495	421	205	623	529	186	1079	287	119	1105	149
Arrive On Green	0.05	0.27	0.27	0.12	0.33	0.33	0.10	0.39	0.39	0.07	0.35	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2765	737	1774	3136	422
Grp Volume(v), veh/h	6	179	212	107	288	17	92	245	245	29	301	305
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1733	1774	1770	1788
Q Serve(g_s), s	0.2	3.9	5.6	2.8	6.0	0.4	2.4	4.9	5.0	0.8	6.5	6.6
Cycle Q Clear(g_c), s	0.2	3.9	5.6	2.8	6.0	0.4	2.4	4.9	5.0	0.8	6.5	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		0.24
Lane Grp Cap(c), veh/h	83	495	421	205	623	529	186	690	676	119	624	630
V/C Ratio(X)	0.07	0.36	0.50	0.52	0.46	0.03	0.50	0.36	0.36	0.24	0.48	0.48
Avail Cap(c_a), veh/h	215	1130	961	215	1130	961	215	1074	1051	215	1074	1085
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	14.7	15.4	20.6	13.0	11.1	20.9	10.7	10.7	21.9	12.5	12.5
Incr Delay (d2), s/veh	0.4	0.4	0.9	2.1	0.5	0.0	2.0	0.3	0.3	1.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	2.5	1.5	3.1	0.2	1.3	2.4	2.4	0.4	3.3	3.3
LnGrp Delay(d),s/veh	22.9	15.2	16.3	22.7	13.5	11.1	22.9	11.0	11.0	22.9	13.1	13.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		397			412			582			635	
Approach Delay, s/veh		15.9			15.8			12.9			13.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	15.1	7.2	19.4	4.3	18.5	5.3	21.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	28.0	4.0	28.0	4.0	28.0				
Max Q Clear Time (g_c+14), s	4.0	7.6	4.4	8.6	2.2	8.0	2.8	7.0				
Green Ext Time (p_c), s	0.0	3.5	0.0	6.8	0.0	3.5	0.0	7.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.3								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	119	63	0	104	84	62	634	3	212	1326	175
Future Volume (veh/h)	71	119	63	0	104	84	62	634	3	212	1326	175
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	75	125	66	0	109	88	65	667	3	223	1396	184
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	558	475	4	312	265	156	2296	10	249	1742	779
Arrive On Green	0.09	0.30	0.30	0.00	0.17	0.17	0.09	0.44	0.44	0.14	0.49	0.49
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5225	23	1774	3539	1583
Grp Volume(v), veh/h	75	125	66	0	109	88	65	433	237	223	1396	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1859	1774	1770	1583
Q Serve(g_s), s	2.0	2.5	1.5	0.0	2.6	2.4	1.7	4.1	4.1	6.2	16.5	3.3
Cycle Q Clear(g_c), s	2.0	2.5	1.5	0.0	2.6	2.4	1.7	4.1	4.1	6.2	16.5	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	163	558	475	4	312	265	156	1490	817	249	1742	779
V/C Ratio(X)	0.46	0.22	0.14	0.00	0.35	0.33	0.42	0.29	0.29	0.89	0.80	0.24
Avail Cap(c_a), veh/h	214	1121	953	214	1121	953	214	1633	895	249	1775	794
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	13.1	12.8	0.0	18.3	18.3	21.5	9.0	9.0	21.1	10.6	7.3
Incr Delay (d2), s/veh	2.0	0.2	0.1	0.0	0.7	0.7	1.8	0.1	0.2	31.0	2.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.7	0.0	1.4	1.1	0.9	1.9	2.1	5.1	8.6	1.5
LnGrp Delay(d),s/veh	23.5	13.3	12.9	0.0	19.0	19.0	23.3	9.1	9.2	52.1	13.3	7.4
LnGrp LOS	C	B	B		B	B	C	A	A	D	B	A
Approach Vol, veh/h		266			197			735			1803	
Approach Delay, s/veh		16.1			19.0			10.4			17.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	16.9	6.4	26.5	6.6	10.4	9.0	23.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	23.0	4.0	28.0	5.0	22.0				
Max Q Clear Time (g_c+10), s	4.0	4.5	3.7	18.5	4.0	4.6	8.2	6.1				
Green Ext Time (p_c), s	0.0	1.8	0.0	4.0	0.0	1.8	0.0	12.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					15.7							
HCM 2010 LOS					B							

HCM 2010 Signalized Intersection Summary  
 29: Placentia & Orangethorpe

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗		↖	↖	↖	↖	↖ ↗	↖ ↗	
Traffic Volume (veh/h)	324	826	69	123	600	236	45	422	132	162	425	251
Future Volume (veh/h)	324	826	69	123	600	236	45	422	132	162	425	251
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	341	869	73	129	632	0	47	444	139	171	447	264
Adj No. of Lanes	1	3	0	1	3	1	1	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1665	139	212	1542	480	115	1093	489	358	748	439
Arrive On Green	0.16	0.35	0.35	0.12	0.30	0.00	0.06	0.31	0.31	0.10	0.35	0.35
Sat Flow, veh/h	1774	4782	400	1774	5085	1583	1774	3539	1583	3442	2149	1260
Grp Volume(v), veh/h	341	615	327	129	632	0	47	444	139	171	367	344
Grp Sat Flow(s),veh/h/ln	1774	1695	1792	1774	1695	1583	1774	1770	1583	1721	1770	1640
Q Serve(g_s), s	11.0	9.7	9.7	4.6	6.6	0.0	1.7	6.6	4.5	3.1	11.4	11.6
Cycle Q Clear(g_c), s	11.0	9.7	9.7	4.6	6.6	0.0	1.7	6.6	4.5	3.1	11.4	11.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	292	1180	624	212	1542	480	115	1093	489	358	616	571
V/C Ratio(X)	1.17	0.52	0.52	0.61	0.41	0.00	0.41	0.41	0.28	0.48	0.60	0.60
Avail Cap(c_a), veh/h	292	1519	803	212	2051	639	159	1639	733	411	872	809
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	17.4	17.4	28.0	18.6	0.0	30.1	18.3	17.5	28.3	17.9	18.0
Incr Delay (d2), s/veh	106.8	0.4	0.7	5.0	0.2	0.0	2.3	0.2	0.3	1.0	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	4.6	4.9	2.5	3.1	0.0	0.9	3.2	2.0	1.5	5.7	5.4
LnGrp Delay(d),s/veh	134.7	17.7	18.1	32.9	18.7	0.0	32.4	18.5	17.8	29.3	18.9	19.0
LnGrp LOS	F	B	B	C	B		C	B	B	C	B	B
Approach Vol, veh/h		1283			761			630			882	
Approach Delay, s/veh		48.9			21.1			19.4			20.9	
Approach LOS		D			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	25.3	6.3	25.3	13.0	22.3	9.0	22.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	31.0	9.0	25.0	6.0	29.0				
Max Q Clear Time (g_c+10), s	4.0	11.7	3.7	13.6	13.0	8.6	5.1	8.6				
Green Ext Time (p_c), s	0.0	9.6	0.0	7.7	0.0	9.6	0.0	8.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				30.8								
HCM 2010 LOS				C								

HCM Signalized Intersection Capacity Analysis  
30: SR57 SB Ramp & Orangethorpe

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↘		↖	↑↑↑	↗		↖	↗	↖	↕	
Traffic Volume (vph)	150	1009	2	13	890	496	3	9	36	321	0	167
Future Volume (vph)	150	1009	2	13	890	496	3	9	36	321	0	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	9	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.99	
Satd. Flow (prot)	3433	5084		1770	5085	1583		1717	1425	1681	1558	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.99	
Satd. Flow (perm)	3433	5084		1770	5085	1583		1717	1425	1681	1558	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	1062	2	14	937	522	3	9	38	338	0	176
RTOR Reduction (vph)	0	0	0	0	0	250	0	0	36	0	122	0
Lane Group Flow (vph)	158	1064	0	14	937	272	0	12	2	267	125	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	3.0	26.0		0.6	23.6	23.6		2.0	2.0	16.7	16.7	
Effective Green, g (s)	5.0	28.0		2.6	25.6	25.6		4.0	4.0	18.7	18.7	
Actuated g/C Ratio	0.08	0.46		0.04	0.42	0.42		0.07	0.07	0.31	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	280	2322		75	2123	661		112	92	512	475	
v/s Ratio Prot	c0.05	c0.21		0.01	0.18			c0.01		c0.16	0.08	
v/s Ratio Perm						0.17			0.00			
v/c Ratio	0.56	0.46		0.19	0.44	0.41		0.11	0.03	0.52	0.26	
Uniform Delay, d1	27.1	11.4		28.3	12.7	12.5		27.0	26.8	17.6	16.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.1		1.2	0.1	0.4		0.4	0.1	1.0	0.3	
Delay (s)	29.7	11.6		29.5	12.9	13.0		27.4	26.9	18.6	16.4	
Level of Service	C	B		C	B	B		C	C	B	B	
Approach Delay (s)		13.9			13.1			27.1			17.5	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑			↑↑↑		↔↔		↑			
Traffic Volume (veh/h)	174	1192	0	0	1133	239	266	0	589	0	0	0
Future Volume (veh/h)	174	1192	0	0	1133	239	266	0	589	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	183	1255	0	0	1193	252	280	0	620			
Adj No. of Lanes	2	3	0	0	3	0	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	330	2435	0	0	1476	312	1573	0	724			
Arrive On Green	0.10	0.48	0.00	0.00	0.35	0.35	0.46	0.00	0.46			
Sat Flow, veh/h	3442	5253	0	0	4375	889	3442	0	1583			
Grp Volume(v), veh/h	183	1255	0	0	961	484	280	0	620			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1706	1721	0	1583			
Q Serve(g_s), s	3.2	10.7	0.0	0.0	16.1	16.1	3.0	0.0	21.8			
Cycle Q Clear(g_c), s	3.2	10.7	0.0	0.0	16.1	16.1	3.0	0.0	21.8			
Prop In Lane	1.00		0.00	0.00		0.52	1.00		1.00			
Lane Grp Cap(c), veh/h	330	2435	0	0	1189	598	1573	0	724			
V/C Ratio(X)	0.55	0.52	0.00	0.00	0.81	0.81	0.18	0.00	0.86			
Avail Cap(c_a), veh/h	330	2441	0	0	1193	601	1983	0	912			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	27.0	11.3	0.0	0.0	18.4	18.4	10.0	0.0	15.1			
Incr Delay (d2), s/veh	2.0	0.2	0.0	0.0	4.2	8.1	0.1	0.0	6.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.6	4.9	0.0	0.0	8.2	8.9	1.4	0.0	10.8			
LnGrp Delay(d),s/veh	29.0	11.5	0.0	0.0	22.6	26.4	10.1	0.0	21.8			
LnGrp LOS	C	B			C	C	B		C			
Approach Vol, veh/h		1438			1445			900				
Approach Delay, s/veh		13.7			23.9			18.2				
Approach LOS		B			C			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		31.9			8.0	23.9		30.6				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		12.7			5.2	18.1		23.8				
Green Ext Time (p_c), s		13.5			0.0	1.9		2.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					18.7							
HCM 2010 LOS					B							

HCM 2010 Signalized Intersection Summary  
32: Melrose & Orangethorpe

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔↔			↔↔↔↔			↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	244	768	491	81	818	54	181	336	59	66	514	228
Future Volume (veh/h)	244	768	491	81	818	54	181	336	59	66	514	228
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	257	808	517	85	861	57	191	354	62	69	541	240
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1162	543	257	1618	107	253	1179	205	137	777	344
Arrive On Green	0.09	0.34	0.34	0.07	0.33	0.33	0.14	0.39	0.39	0.08	0.33	0.33
Sat Flow, veh/h	3442	3390	1583	3442	4874	322	1774	3017	523	1774	2389	1057
Grp Volume(v), veh/h	257	808	517	85	598	320	191	206	210	69	400	381
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1806	1774	1770	1770	1774	1770	1676
Q Serve(g_s), s	5.2	14.4	22.3	1.6	10.0	10.1	7.2	5.6	5.7	2.6	13.8	13.9
Cycle Q Clear(g_c), s	5.2	14.4	22.3	1.6	10.0	10.1	7.2	5.6	5.7	2.6	13.8	13.9
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.30	1.00		0.63
Lane Grp Cap(c), veh/h	295	1162	543	257	1125	599	253	692	692	137	576	545
V/C Ratio(X)	0.87	0.70	0.95	0.33	0.53	0.53	0.75	0.30	0.30	0.50	0.70	0.70
Avail Cap(c_a), veh/h	295	1162	543	295	1162	619	253	784	784	152	682	646
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	19.8	22.4	30.7	19.0	19.0	28.8	14.7	14.7	31.0	20.6	20.6
Incr Delay (d2), s/veh	23.5	1.8	27.1	0.7	0.4	0.8	12.0	0.2	0.2	2.8	2.5	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	7.0	13.7	0.8	4.7	5.1	4.4	2.8	2.8	1.4	7.1	6.7
LnGrp Delay(d),s/veh	55.1	21.7	49.6	31.5	19.4	19.8	40.9	14.9	15.0	33.9	23.1	23.3
LnGrp LOS	E	C	D	C	B	B	D	B	B	C	C	C
Approach Vol, veh/h		1582			1003			607			850	
Approach Delay, s/veh		36.2			20.6			23.1			24.0	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	26.0	12.0	24.8	8.0	25.2	7.4	29.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+1), s	4.0	24.3	9.2	15.9	7.2	12.1	4.6	7.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	4.9	0.0	8.3	0.0	8.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				27.8								
HCM 2010 LOS				C								



HCM 2010 Signalized Intersection Summary  
33: Kraemer & Orangethorpe

2040 Base AM  
07/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	474	335	155	438	48	169	507	72	47	1152	233
Future Volume (veh/h)	161	474	335	155	438	48	169	507	72	47	1152	233
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	169	499	353	163	461	51	178	534	76	49	1213	245
Adj No. of Lanes	1	2	1	1	3	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1046	468	235	1582	172	215	1513	677	101	1285	575
Arrive On Green	0.09	0.30	0.30	0.13	0.34	0.34	0.12	0.43	0.43	0.06	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	4656	507	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	169	499	353	163	334	178	178	534	76	49	1213	245
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1773	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.0	10.5	18.4	8.0	6.6	6.7	8.9	9.2	2.6	2.4	30.2	10.6
Cycle Q Clear(g_c), s	8.0	10.5	18.4	8.0	6.6	6.7	8.9	9.2	2.6	2.4	30.2	10.6
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	1046	468	235	1152	602	215	1513	677	101	1285	575
V/C Ratio(X)	1.08	0.48	0.75	0.69	0.29	0.30	0.83	0.35	0.11	0.49	0.94	0.43
Avail Cap(c_a), veh/h	156	1168	523	351	1492	780	215	1513	677	156	1285	575
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	26.2	29.0	37.7	22.0	22.0	39.0	17.5	15.6	41.6	28.0	21.8
Incr Delay (d2), s/veh	95.7	0.3	5.5	3.7	0.1	0.3	22.9	0.1	0.1	3.6	13.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	5.2	8.8	4.1	3.1	3.3	5.7	4.6	1.2	1.3	17.1	4.7
LnGrp Delay(d),s/veh	137.1	26.6	34.5	41.4	22.1	22.3	61.9	17.7	15.7	45.2	41.9	22.3
LnGrp LOS	F	C	C	D	C	C	E	B	B	D	D	C
Approach Vol, veh/h		1021			675			788			1507	
Approach Delay, s/veh		47.6			26.8			27.5			38.8	
Approach LOS		D			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	28.9	13.0	35.0	10.0	32.9	7.2	40.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	28.0	9.0	31.0	6.0	38.0	6.0	34.0				
Max Q Clear Time (g_c+I1), s	10.0	20.4	10.9	32.2	10.0	8.7	4.4	11.2				
Green Ext Time (p_c), s	0.2	4.5	0.0	0.0	0.0	9.5	0.0	15.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			36.8									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis  
 34: Miller/Crowther & Orangethorpe

2040 Base AM  
 07/12/2018



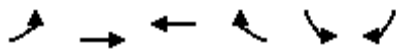
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↖↗		↖	↗↖↗	↖	↖	↗	↖	↖	↗	↖
Traffic Volume (vph)	1	440	162	111	492	103	28	44	34	48	266	3
Future Volume (vph)	1	440	162	111	492	103	28	44	34	48	266	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	9	12	12	12	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Fr <sub>t</sub>	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4880		1770	4746	1425	1681	1765	1583	1681	1768	1583
Fl <sub>t</sub> Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	4880		1770	4746	1425	1681	1765	1583	1681	1768	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	1	506	186	128	566	118	32	51	39	55	306	3
RTOR Reduction (vph)	0	77	0	0	0	70	0	0	36	0	0	2
Lane Group Flow (vph)	1	615	0	128	566	48	29	54	3	49	312	1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		7	7	
Permitted Phases						6			3			7
Actuated Green, G (s)	1.1	17.0		5.0	20.9	20.9	2.9	2.9	2.9	15.9	15.9	15.9
Effective Green, g (s)	3.1	19.0		7.0	22.9	22.9	4.9	4.9	4.9	17.9	17.9	17.9
Actuated g/C Ratio	0.05	0.33		0.12	0.40	0.40	0.09	0.09	0.09	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Lane Grp Cap (vph)	96	1632		218	1913	574	145	152	136	529	557	498
v/s Ratio Prot	0.00	c0.13		c0.07	0.12		0.02	c0.03		0.03	c0.18	
v/s Ratio Perm						0.03			0.00			0.00
v/c Ratio	0.01	0.38		0.59	0.30	0.08	0.20	0.36	0.02	0.09	0.56	0.00
Uniform Delay, d <sub>1</sub>	25.4	14.4		23.5	11.5	10.5	24.1	24.5	23.8	13.7	16.2	13.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d <sub>2</sub>	0.0	0.1		4.0	0.1	0.1	0.7	1.4	0.1	0.1	1.3	0.0
Delay (s)	25.4	14.5		27.5	11.6	10.5	24.8	25.9	23.8	13.8	17.5	13.3
Level of Service	C	B		C	B	B	C	C	C	B	B	B
Approach Delay (s)		14.6			13.9			25.0			16.9	
Approach LOS		B			B			C			B	

**Intersection Summary**

HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary  
 35: Orangethorpe & Chapman

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖	↗↗↗	↖↖↖		↖↖	↗		
Traffic Volume (veh/h)	33	489	600	356	459	106		
Future Volume (veh/h)	33	489	600	356	459	106		
Number	5	2	6	16	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	35	515	632	375	483	112		
Adj No. of Lanes	1	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	145	3209	1696	792	930	428		
Arrive On Green	0.08	0.63	0.50	0.50	0.27	0.27		
Sat Flow, veh/h	1774	5253	3558	1583	3442	1583		
Grp Volume(v), veh/h	35	515	632	375	483	112		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1721	1583		
Q Serve(g_s), s	0.7	1.7	4.6	6.3	4.8	2.2		
Cycle Q Clear(g_c), s	0.7	1.7	4.6	6.3	4.8	2.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	145	3209	1696	792	930	428		
V/C Ratio(X)	0.24	0.16	0.37	0.47	0.52	0.26		
Avail Cap(c_a), veh/h	263	4522	2345	1095	2550	1173		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.4	3.1	6.2	6.6	12.5	11.6		
Incr Delay (d2), s/veh	0.9	0.0	0.1	0.4	0.5	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.4	0.8	2.1	2.8	2.3	1.0		
LnGrp Delay(d),s/veh	18.3	3.1	6.4	7.1	13.0	11.9		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		550	1007		595			
Approach Delay, s/veh		4.1	6.6		12.8			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.5			5.3	22.2		12.9
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		34.0			4.0	26.0		28.0
Max Q Clear Time (g_c+I1), s		3.7			2.7	8.3		6.8
Green Ext Time (p_c), s		13.3			0.0	10.0		2.1
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			7.7					
HCM 2010 LOS			A					

HCM Signalized Intersection Capacity Analysis  
 36: Del Cerro Drive & Rose

2040 Base AM  
 07/12/2018



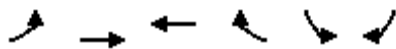
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	205	91	554	53	75	1810
Future Volume (vph)	205	91	554	53	75	1810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.99	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3426	1441	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3426	1441	3539	1583	1770	3539
Peak-hour factor, PHF	0.92	0.95	0.92	0.92	0.95	0.92
Adj. Flow (vph)	223	96	602	58	79	1967
RTOR Reduction (vph)	5	75	0	18	0	0
Lane Group Flow (vph)	228	11	602	40	79	1967
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	5.1	5.1	37.8	37.8	2.2	44.0
Effective Green, g (s)	7.1	7.1	39.8	39.8	4.2	46.0
Actuated g/C Ratio	0.12	0.12	0.70	0.70	0.07	0.81
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	426	179	2466	1103	130	2851
v/s Ratio Prot	c0.07		0.17		0.04	c0.56
v/s Ratio Perm		0.01		0.03		
v/c Ratio	0.53	0.06	0.24	0.04	0.61	0.69
Uniform Delay, d1	23.5	22.1	3.2	2.7	25.7	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.1	0.0	7.8	0.7
Delay (s)	24.7	22.2	3.2	2.7	33.5	3.1
Level of Service	C	C	A	A	C	A
Approach Delay (s)	24.1		3.2			4.3
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 37: Orangethorpe & Del Cerro Drive

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↔↔	↑↑↑	↑↑↑		↔	↔↔		
Traffic Volume (veh/h)	120	529	849	163	68	80		
Future Volume (veh/h)	120	529	849	163	68	80		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	130	575	923	177	74	87		
Adj No. of Lanes	2	3	3	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	460	3713	2327	445	287	451		
Arrive On Green	0.13	0.73	0.54	0.54	0.16	0.16		
Sat Flow, veh/h	3442	5253	4457	819	1774	2787		
Grp Volume(v), veh/h	130	575	729	371	74	87		
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1718	1774	1393		
Q Serve(g_s), s	1.3	1.3	4.6	4.7	1.4	1.0		
Cycle Q Clear(g_c), s	1.3	1.3	4.6	4.7	1.4	1.0		
Prop In Lane	1.00			0.48	1.00	1.00		
Lane Grp Cap(c), veh/h	460	3713	1839	932	287	451		
V/C Ratio(X)	0.28	0.15	0.40	0.40	0.26	0.19		
Avail Cap(c_a), veh/h	650	5079	2562	1299	1868	2934		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.4	1.5	4.9	4.9	13.6	13.4		
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.3	0.5	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	0.6	2.2	2.2	0.7	0.0		
LnGrp Delay(d),s/veh	14.8	1.5	5.1	5.2	14.0	13.6		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		705	1100		161			
Approach Delay, s/veh		4.0	5.1		13.8			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				29.0		8.0	7.0	22.1
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				35.0		37.0	5.0	26.0
Max Q Clear Time (g_c+I1), s				3.3		3.4	3.3	6.7
Green Ext Time (p_c), s				15.1		0.5	0.1	11.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			5.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary  
 38: Jefferson & Orangethorpe

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	550	44	39	884	61	21	58	27	80	205	196
Future Volume (veh/h)	26	550	44	39	884	61	21	58	27	80	205	196
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	579	46	41	931	64	22	61	28	84	216	206
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	1501	119	136	1634	702	111	498	215	177	454	386
Arrive On Green	0.07	0.45	0.45	0.08	0.46	0.46	0.06	0.21	0.21	0.10	0.24	0.24
Sat Flow, veh/h	1774	3322	264	1774	3539	1520	1774	2409	1040	1774	1863	1583
Grp Volume(v), veh/h	27	308	317	41	931	64	22	44	45	84	216	206
Grp Sat Flow(s),veh/h/ln	1774	1770	1816	1774	1770	1520	1774	1770	1679	1774	1863	1583
Q Serve(g_s), s	0.7	5.6	5.6	1.1	9.3	1.1	0.6	1.0	1.1	2.2	4.8	5.5
Cycle Q Clear(g_c), s	0.7	5.6	5.6	1.1	9.3	1.1	0.6	1.0	1.1	2.2	4.8	5.5
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	118	799	820	136	1634	702	111	366	347	177	454	386
V/C Ratio(X)	0.23	0.39	0.39	0.30	0.57	0.09	0.20	0.12	0.13	0.48	0.48	0.53
Avail Cap(c_a), veh/h	220	1026	1053	220	2051	881	220	989	938	220	1041	885
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	8.8	8.8	21.1	9.5	7.3	21.5	15.6	15.6	20.6	15.6	15.9
Incr Delay (d2), s/veh	1.0	0.3	0.3	1.2	0.3	0.1	0.9	0.1	0.2	2.0	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	2.8	0.6	4.6	0.5	0.3	0.5	0.5	1.1	2.6	2.5
LnGrp Delay(d),s/veh	22.3	9.1	9.1	22.3	9.8	7.4	22.4	15.7	15.8	22.5	16.4	17.0
LnGrp LOS	C	A	A	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		652			1036			111			506	
Approach Delay, s/veh		9.6			10.2			17.1			17.7	
Approach LOS		A			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	23.8	5.0	13.8	5.2	24.3	6.8	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	4.0	25.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+11), s	4.0	7.6	2.6	7.5	2.7	11.3	4.2	3.1				
Green Ext Time (p_c), s	0.0	10.4	0.0	2.3	0.0	9.0	0.0	2.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
 39: Van Buren & Orangethorpe

2040 Base AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↑	↗	↖	↑	↗
Traffic Volume (veh/h)	40	570	47	40	792	38	23	55	25	56	272	169
Future Volume (veh/h)	40	570	47	40	792	38	23	55	25	56	272	169
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	42	570	49	42	834	40	24	58	26	59	286	178
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	1383	119	138	1484	637	115	463	393	155	505	429
Arrive On Green	0.08	0.42	0.42	0.08	0.42	0.42	0.06	0.25	0.25	0.09	0.27	0.27
Sat Flow, veh/h	1774	3299	283	1774	3539	1520	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	42	305	314	42	834	40	24	58	26	59	286	178
Grp Sat Flow(s),veh/h/ln	1774	1770	1813	1774	1770	1520	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	5.8	5.8	1.1	8.6	0.8	0.6	1.2	0.6	1.5	6.3	4.4
Cycle Q Clear(g_c), s	1.1	5.8	5.8	1.1	8.6	0.8	0.6	1.2	0.6	1.5	6.3	4.4
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	742	760	138	1484	637	115	463	393	155	505	429
V/C Ratio(X)	0.30	0.41	0.41	0.30	0.56	0.06	0.21	0.13	0.07	0.38	0.57	0.41
Avail Cap(c_a), veh/h	223	815	835	334	1851	795	223	1169	994	223	1169	994
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	9.7	9.7	20.8	10.5	8.3	21.2	13.9	13.7	20.6	15.0	14.3
Incr Delay (d2), s/veh	1.2	0.4	0.4	1.2	0.3	0.0	0.9	0.1	0.1	1.5	1.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.9	3.0	0.6	4.2	0.3	0.3	0.6	0.3	0.8	3.4	2.0
LnGrp Delay(d),s/veh	22.1	10.1	10.1	22.1	10.9	8.3	22.1	14.1	13.8	22.1	16.0	14.9
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		661			916			108			523	
Approach Delay, s/veh		10.9			11.3			15.8			16.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	22.0	5.1	15.0	5.7	22.0	6.2	13.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	4.0	28.0	4.0	23.0	4.0	28.0					
Max Q Clear Time (g_c+11), s	7.8	2.6	8.3	3.1	10.6	3.5	3.2					
Green Ext Time (p_c), s	0.0	7.4	0.0	2.6	0.0	7.5	0.0	2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
40: Richfield & Orangethorpe

2040 Base AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	497	97	124	809	73	11	136	45	75	626	42
Future Volume (veh/h)	60	497	97	124	809	73	11	136	45	75	626	42
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	63	523	102	131	852	77	12	143	47	79	659	44
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	1282	574	195	1382	594	87	764	243	163	1118	75
Arrive On Green	0.08	0.36	0.36	0.11	0.39	0.39	0.05	0.29	0.29	0.09	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	1774	2645	839	1774	3368	225
Grp Volume(v), veh/h	63	523	102	131	852	77	12	94	96	79	346	357
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	1774	1770	1715	1774	1770	1823
Q Serve(g_s), s	1.8	6.0	2.4	3.9	10.5	1.8	0.4	2.2	2.3	2.3	8.8	8.9
Cycle Q Clear(g_c), s	1.8	6.0	2.4	3.9	10.5	1.8	0.4	2.2	2.3	2.3	8.8	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		0.12
Lane Grp Cap(c), veh/h	145	1282	574	195	1382	594	87	511	496	163	587	605
V/C Ratio(X)	0.43	0.41	0.18	0.67	0.62	0.13	0.14	0.18	0.19	0.48	0.59	0.59
Avail Cap(c_a), veh/h	195	1623	726	195	1623	697	195	974	944	195	974	1003
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	13.0	11.8	23.3	13.3	10.7	24.8	14.6	14.6	23.5	15.1	15.1
Incr Delay (d2), s/veh	2.0	0.2	0.1	8.6	0.5	0.1	0.7	0.2	0.2	2.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.9	1.1	2.4	5.2	0.7	0.2	1.1	1.1	1.2	4.5	4.6
LnGrp Delay(d),s/veh	25.9	13.2	12.0	31.9	13.9	10.8	25.5	14.7	14.8	25.8	16.1	16.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		688			1060			202			782	
Approach Delay, s/veh		14.2			15.9			15.4			17.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	21.8	4.7	20.1	6.5	23.3	7.0	17.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+15), s	4.0	8.0	2.4	10.9	3.8	12.5	4.3	4.3				
Green Ext Time (p_c), s	0.0	8.7	0.0	5.2	0.0	6.8	0.0	5.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					15.7							
HCM 2010 LOS					B							



**Intersection**

Intersection Delay, s/veh 12.1  
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑		↵	↑↑			↵↵			↵↵	
Traffic Vol, veh/h	30	190	73	25	216	18	30	64	17	31	271	40
Future Vol, veh/h	30	190	73	25	216	18	30	64	17	31	271	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	200	77	26	227	19	32	67	18	33	285	42
Number of Lanes	1	2	0	1	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay	11.8	12	11.2	12.8
HCM LOS	B	B	B	B
























Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	48%	0%	100%	0%	0%	100%	0%	0%	19%	0%
Vol Thru, %	52%	65%	0%	100%	46%	0%	100%	80%	81%	77%
Vol Right, %	0%	35%	0%	0%	54%	0%	0%	20%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	49	30	127	136	25	144	90	167	176
LT Vol	30	0	30	0	0	25	0	0	31	0
Through Vol	32	32	0	127	63	0	144	72	136	136
RT Vol	0	17	0	0	73	0	0	18	0	40
Lane Flow Rate	65	52	32	133	144	26	152	95	175	185
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.139	0.103	0.066	0.256	0.264	0.055	0.298	0.183	0.331	0.336
Departure Headway (Hd)	7.658	7.169	7.526	7.026	6.634	7.592	7.082	6.94	6.916	6.663
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	470	502	478	515	544	474	511	520	524	543
Service Time	5.376	4.887	5.235	4.726	4.344	5.299	4.789	4.646	4.616	4.363
HCM Lane V/C Ratio	0.138	0.104	0.067	0.258	0.265	0.055	0.297	0.183	0.334	0.341
HCM Control Delay	11.6	10.7	10.8	12.1	11.7	10.7	12.8	11.2	13	12.7
HCM Lane LOS	B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.5	0.3	0.2	1	1.1	0.2	1.2	0.7	1.4	1.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	143	86	4	144	33	37	169	30	61	613	88
Future Volume (veh/h)	27	143	86	4	144	33	37	169	30	61	613	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	28	151	91	4	152	35	39	178	32	64	645	93
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	473	269	347	625	140	605	2069	365	950	2136	308
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1192	2174	1240	1133	2873	645	717	3008	531	1167	3106	447
Grp Volume(v), veh/h	28	121	121	4	92	95	39	103	107	64	367	371
Grp Sat Flow(s),veh/h/ln	1192	1770	1644	1133	1770	1749	717	1770	1769	1167	1770	1784
Q Serve(g_s), s	0.8	2.4	2.6	0.1	1.8	1.9	1.0	0.8	0.8	0.8	3.4	3.5
Cycle Q Clear(g_c), s	2.7	2.4	2.6	2.7	1.8	1.9	4.4	0.8	0.8	1.7	3.4	3.5
Prop In Lane	1.00		0.75	1.00		0.37	1.00		0.30	1.00		0.25
Lane Grp Cap(c), veh/h	376	385	357	347	385	380	605	1217	1217	950	1217	1227
V/C Ratio(X)	0.07	0.32	0.34	0.01	0.24	0.25	0.06	0.08	0.09	0.07	0.30	0.30
Avail Cap(c_a), veh/h	880	1133	1053	826	1133	1120	605	1217	1217	950	1217	1227
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	13.9	13.9	15.1	13.6	13.7	3.5	2.2	2.2	2.5	2.6	2.6
Incr Delay (d2), s/veh	0.1	0.5	0.6	0.0	0.3	0.3	0.2	0.1	0.1	0.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	1.2	0.0	0.9	0.9	0.2	0.4	0.4	0.3	1.8	1.9
LnGrp Delay(d),s/veh	14.9	14.3	14.5	15.1	13.9	14.0	3.7	2.3	2.3	2.6	3.2	3.2
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		270			191			249			802	
Approach Delay, s/veh		14.5			14.0			2.5			3.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		11.2		31.0		11.2				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		6.4		4.7		5.5		4.7				
Green Ext Time (p_c), s		6.4		2.5		6.5		2.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				6.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
 1: Kraemer & Golden

2040 Base PM  
 07/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	14	44	97	14	105	42	746	121	128	1072	20
Future Volume (veh/h)	25	14	44	97	14	105	42	746	121	128	1072	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	26	15	46	102	15	111	44	785	127	135	1128	21
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	152	325	455	398	338	451	2404	1075	551	2404	1032
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	777	713	1520	1336	1863	1583	487	3539	1583	609	3539	1520
Grp Volume(v), veh/h	41	0	46	102	15	111	44	785	127	135	1128	21
Grp Sat Flow(s),veh/h/ln	1491	0	1520	1336	1863	1583	487	1770	1583	609	1770	1520
Q Serve(g_s), s	0.0	0.0	0.9	2.5	0.2	2.2	1.7	3.4	1.0	4.4	5.6	0.2
Cycle Q Clear(g_c), s	0.7	0.0	0.9	3.1	0.2	2.2	7.3	3.4	1.0	7.8	5.6	0.2
Prop In Lane	0.63		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	476	0	325	455	398	338	451	2404	1075	551	2404	1032
V/C Ratio(X)	0.09	0.00	0.14	0.22	0.04	0.33	0.10	0.33	0.12	0.24	0.47	0.02
Avail Cap(c_a), veh/h	1204	0	1100	1136	1348	1145	498	2750	1230	611	2750	1181
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	11.9	13.1	11.6	12.4	4.5	2.5	2.1	4.1	2.8	1.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.2	0.0	0.6	0.1	0.1	0.0	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.4	0.9	0.1	1.0	0.2	1.7	0.4	0.7	2.7	0.1
LnGrp Delay(d),s/veh	11.9	0.0	12.1	13.3	11.7	13.0	4.6	2.5	2.1	4.3	3.0	2.0
LnGrp LOS	B		B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		87			228			956			1284	
Approach Delay, s/veh		12.0			13.0			2.6			3.1	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.4		10.0		27.4		10.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		9.3		2.9		9.8		5.1				
Green Ext Time (p_c), s		13.8		1.1		13.6		1.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			4.1									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary  
2: Valencia & Golden

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	73	66	34	86	54	51	355	48	44	390	42
Future Volume (veh/h)	46	73	66	34	86	54	51	355	48	44	390	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	77	69	36	91	57	54	374	51	46	411	44
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	622	537	456	629	537	456	750	1689	229	767	1740	185
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1235	1863	1583	1237	1863	1583	932	3133	424	958	3228	344
Grp Volume(v), veh/h	48	77	69	36	91	57	54	210	215	46	224	231
Grp Sat Flow(s),veh/h/ln	1235	1863	1583	1237	1863	1583	932	1770	1788	958	1770	1802
Q Serve(g_s), s	0.7	0.7	0.8	0.5	0.8	0.6	0.8	1.4	1.5	0.6	1.5	1.6
Cycle Q Clear(g_c), s	1.5	0.7	0.8	1.2	0.8	0.6	2.3	1.4	1.5	2.1	1.5	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.19
Lane Grp Cap(c), veh/h	622	537	456	629	537	456	750	954	964	767	954	971
V/C Ratio(X)	0.08	0.14	0.15	0.06	0.17	0.12	0.07	0.22	0.22	0.06	0.24	0.24
Avail Cap(c_a), veh/h	1706	2172	1846	1715	2172	1846	1416	2216	2239	1451	2216	2257
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.7	6.1	6.1	6.6	6.2	6.1	3.4	2.8	2.8	3.3	2.8	2.8
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	0.3	0.2	0.5	0.3	0.2	0.7	0.7	0.2	0.8	0.8
LnGrp Delay(d),s/veh	6.8	6.2	6.3	6.6	6.3	6.2	3.5	2.9	2.9	3.4	2.9	2.9
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		194			184			479			501	
Approach Delay, s/veh		6.4			6.3			3.0			3.0	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.5		8.7		14.5		8.7				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		4.3		3.5		4.1		3.2				
Green Ext Time (p_c), s		6.2		1.6		6.2		1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				3.9								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	69	1574	267	163	1447	769	322	615	121	806	410	50
Future Volume (veh/h)	69	1574	267	163	1447	769	322	615	121	806	410	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	1657	281	172	1523	809	339	647	127	848	432	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1558	263	300	1885	587	340	960	430	713	1345	0
Arrive On Green	0.07	0.36	0.36	0.09	0.37	0.37	0.10	0.27	0.27	0.21	0.38	0.00
Sat Flow, veh/h	1774	4383	739	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	73	1279	659	172	1523	809	339	647	127	848	432	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1732	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.5	6.4	21.0	8.7	0.0
Cycle Q Clear(g_c), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.5	6.4	21.0	8.7	0.0
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	127	1205	616	300	1885	587	340	960	430	713	1345	0
V/C Ratio(X)	0.57	1.06	1.07	0.57	0.81	1.38	1.00	0.67	0.30	1.19	0.32	0.00
Avail Cap(c_a), veh/h	140	1205	616	306	1885	587	340	1258	563	713	1642	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.5	32.7	32.7	44.4	28.6	31.9	45.6	32.9	29.2	40.2	22.2	0.0
Incr Delay (d2), s/veh	4.6	44.1	56.4	2.5	2.7	180.7	48.2	0.9	0.4	98.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	24.1	26.7	2.4	13.2	45.7	7.0	8.2	2.9	19.7	4.3	0.0
LnGrp Delay(d),s/veh	50.2	76.7	89.1	46.9	31.4	212.6	93.8	33.8	29.6	138.7	22.3	0.0
LnGrp LOS	D	F	F	D	C	F	F	C	C	F	C	
Approach Vol, veh/h		2011			2504			1113			1280	
Approach Delay, s/veh		79.8			91.0			51.6			99.4	
Approach LOS		E			F			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.8	38.0	12.0	40.5	9.3	39.6	23.0	29.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	0	34.0	8.0	45.0	6.0	35.0	19.0	34.0				
Max Q Clear Time (g_c+10), s	0	38.0	12.0	10.7	6.0	39.6	23.0	18.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.6	0.0	0.0	0.0	7.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				82.9								
HCM 2010 LOS				F								

HCM 2010 Signalized Intersection Summary  
 4: Placentia & Bastanchury

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	959	163	292	963	134	233	376	314	193	423	63
Future Volume (veh/h)	51	959	163	292	963	134	233	376	314	193	423	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	1009	172	307	1014	141	245	396	331	203	445	66
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1231	551	282	1565	700	405	567	470	320	954	141
Arrive On Green	0.06	0.35	0.35	0.16	0.44	0.44	0.08	0.31	0.31	0.08	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1840	1524	1774	3095	457
Grp Volume(v), veh/h	54	1009	172	307	1014	141	245	381	346	203	253	258
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1594	1774	1770	1782
Q Serve(g_s), s	2.2	19.7	6.0	12.0	16.9	4.1	6.0	14.3	14.5	6.0	8.7	8.8
Cycle Q Clear(g_c), s	2.2	19.7	6.0	12.0	16.9	4.1	6.0	14.3	14.5	6.0	8.7	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.96	1.00		0.26
Lane Grp Cap(c), veh/h	114	1231	551	282	1565	700	405	545	491	320	545	549
V/C Ratio(X)	0.47	0.82	0.31	1.09	0.65	0.20	0.60	0.70	0.70	0.63	0.46	0.47
Avail Cap(c_a), veh/h	141	1264	566	282	1565	700	405	632	569	320	632	637
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	22.5	18.0	31.8	16.5	12.9	18.7	23.0	23.1	17.9	21.1	21.1
Incr Delay (d2), s/veh	3.0	4.3	0.3	79.8	0.9	0.1	2.5	2.8	3.3	4.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	10.3	2.6	12.0	8.4	1.8	1.9	7.4	6.8	3.2	4.3	4.4
LnGrp Delay(d),s/veh	37.1	26.8	18.4	111.6	17.4	13.0	21.2	25.9	26.4	22.0	21.7	21.8
LnGrp LOS	D	C	B	F	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1235			1462			972			714	
Approach Delay, s/veh		26.1			36.8			24.9			21.8	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	28.3	8.0	25.3	6.9	35.4	8.0	25.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	25.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	11.4	21.7	8.0	10.8	4.2	18.9	8.0	16.5				
Green Ext Time (p_c), s	0.0	2.6	0.0	6.8	0.0	10.0	0.0	4.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				28.7								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
5: Kraemer & Bastanchury

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Traffic Volume (veh/h)	212	1032	247	95	860	94	296	756	91	68	721	321
Future Volume (veh/h)	212	1032	247	95	860	94	296	756	91	68	721	321
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	223	1086	260	100	905	99	312	796	96	72	759	338
Adj No. of Lanes	2	2	0	1	3	0	2	2	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	1068	254	170	1682	183	258	1122	135	133	1220	538
Arrive On Green	0.11	0.38	0.38	0.10	0.36	0.36	0.07	0.35	0.35	0.07	0.35	0.35
Sat Flow, veh/h	3442	2838	675	1774	4656	508	3442	3181	384	1774	3457	1526
Grp Volume(v), veh/h	223	675	671	100	658	346	312	443	449	72	744	353
Grp Sat Flow(s),veh/h/ln	1721	1770	1744	1774	1695	1773	1721	1770	1795	1774	1695	1593
Q Serve(g_s), s	4.9	30.1	30.1	4.3	12.3	12.4	6.0	17.3	17.3	3.1	14.6	14.7
Cycle Q Clear(g_c), s	4.9	30.1	30.1	4.3	12.3	12.4	6.0	17.3	17.3	3.1	14.6	14.7
Prop In Lane	1.00		0.39	1.00		0.29	1.00		0.21	1.00		0.96
Lane Grp Cap(c), veh/h	382	666	656	170	1225	640	258	624	633	133	1196	562
V/C Ratio(X)	0.58	1.01	1.02	0.59	0.54	0.54	1.21	0.71	0.71	0.54	0.62	0.63
Avail Cap(c_a), veh/h	387	666	656	244	1356	709	258	664	673	133	1271	597
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	25.0	25.0	34.6	20.3	20.3	37.0	22.3	22.4	35.7	21.5	21.5
Incr Delay (d2), s/veh	2.2	38.3	41.1	3.2	0.4	0.7	124.4	3.3	3.2	4.4	0.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	21.7	21.9	2.3	5.8	6.2	7.3	8.9	9.1	1.7	7.0	6.8
LnGrp Delay(d),s/veh	36.0	63.2	66.1	37.8	20.6	21.0	161.4	25.6	25.6	40.1	22.3	23.4
LnGrp LOS	D	F	F	D	C	C	F	C	C	D	C	C
Approach Vol, veh/h		1569			1104			1204			1169	
Approach Delay, s/veh		60.6			22.3			60.8			23.8	
Approach LOS		E			C			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	32.1	8.0	30.2	10.9	30.9	8.0	30.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	28.0	28.0	4.0	28.0	7.0	30.0	4.0	28.0				
Max Q Clear Time (g_c+16.3), s	32.1	32.1	8.0	16.7	6.9	14.4	5.1	19.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	8.6	0.0	12.5	0.0	6.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				43.7								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary  
6: Valencia & Bastanchury

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	99	883	187	118	773	48	116	343	136	52	327	112
Future Volume (veh/h)	99	883	187	118	773	48	116	343	136	52	327	112
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	104	929	197	124	814	51	122	361	143	55	344	118
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	1503	672	215	1488	93	355	888	346	336	927	313
Arrive On Green	0.11	0.42	0.42	0.12	0.44	0.44	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	3383	212	926	2490	971	891	2600	878
Grp Volume(v), veh/h	104	929	197	124	426	439	122	255	249	55	232	230
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1825	926	1770	1691	891	1770	1708
Q Serve(g_s), s	3.4	12.6	5.0	4.1	10.9	10.9	6.9	6.7	6.8	3.1	6.0	6.1
Cycle Q Clear(g_c), s	3.4	12.6	5.0	4.1	10.9	10.9	13.1	6.7	6.8	9.9	6.0	6.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.57	1.00		0.51
Lane Grp Cap(c), veh/h	188	1503	672	215	778	803	355	631	603	336	631	609
V/C Ratio(X)	0.55	0.62	0.29	0.58	0.55	0.55	0.34	0.40	0.41	0.16	0.37	0.38
Avail Cap(c_a), veh/h	260	1554	695	433	949	979	431	777	742	409	777	750
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	13.8	11.6	25.5	12.7	12.7	19.6	14.9	14.9	18.7	14.7	14.7
Incr Delay (d2), s/veh	2.5	0.7	0.2	2.4	0.6	0.6	0.6	0.4	0.5	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.2	2.2	2.1	5.5	5.6	1.8	3.3	3.3	0.8	3.0	2.9
LnGrp Delay(d),s/veh	28.6	14.5	11.9	27.9	13.3	13.3	20.2	15.3	15.4	18.9	15.0	15.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	B	B	B
Approach Vol, veh/h		1230			989			626			517	
Approach Delay, s/veh		15.3			15.1			16.3			15.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	28.1		23.9	8.5	29.0		23.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	30.0	25.0		25.0	7.0	31.0		25.0				
Max Q Clear Time (g_c+10), s	10.0	14.6		11.9	5.4	12.9		15.1				
Green Ext Time (p_c), s	0.2	7.9		5.8	0.0	12.1		4.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				15.5								
HCM 2010 LOS				B								



HCM 2010 Signalized Intersection Summary  
7: McCormac & Bastanchury

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	973	45	46	902	22	38	16	45	18	11	6
Future Volume (veh/h)	6	973	45	46	902	22	38	16	45	18	11	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	1024	47	48	949	23	40	17	47	19	12	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	575	2432	112	536	2492	60	259	44	118	300	100	44
Arrive On Green	0.71	0.71	0.71	0.71	0.71	0.71	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	576	3446	158	525	3532	86	597	263	708	754	599	262
Grp Volume(v), veh/h	6	526	545	48	476	496	104	0	0	37	0	0
Grp Sat Flow(s),veh/h/ln	576	1770	1835	525	1770	1848	1568	0	0	1615	0	0
Q Serve(g_s), s	0.1	3.9	3.9	1.3	3.4	3.4	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.5	3.9	3.9	5.2	3.4	3.4	1.8	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.05	0.38		0.45	0.51		0.16
Lane Grp Cap(c), veh/h	575	1249	1295	536	1249	1304	420	0	0	443	0	0
V/C Ratio(X)	0.01	0.42	0.42	0.09	0.38	0.38	0.25	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	667	1531	1588	619	1531	1599	1594	0	0	1596	0	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.6	1.9	1.9	3.0	1.8	1.8	11.6	0.0	0.0	11.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.2	0.2	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.9	0.2	1.7	1.7	0.8	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	2.6	2.2	2.1	3.1	2.0	2.0	11.9	0.0	0.0	11.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		1077			1020			104			37	
Approach Delay, s/veh		2.1			2.1			11.9			11.2	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		7.2		24.0		7.2		24.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		3.8		5.9		2.5		7.2				
Green Ext Time (p_c), s		0.7		13.5		0.8		12.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				2.7								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
8: Bradford & Yorba Linda

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑			↖ ↑↑↑			↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	77	1497	145	254	1248	110	211	137	281	121	96	28
Future Volume (veh/h)	77	1497	145	254	1248	110	211	137	281	121	96	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	81	1576	153	267	1314	116	222	144	296	127	101	29
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	1874	182	297	2259	199	475	622	529	384	465	134
Arrive On Green	0.09	0.40	0.40	0.17	0.47	0.47	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1774	4715	457	1774	4759	420	1255	1863	1583	945	1392	400
Grp Volume(v), veh/h	81	1133	596	267	936	494	222	144	296	127	0	130
Grp Sat Flow(s),veh/h/ln	1774	1695	1782	1774	1695	1789	1255	1863	1583	945	0	1792
Q Serve(g_s), s	2.6	18.0	18.1	8.8	11.9	11.9	9.2	3.3	9.1	6.7	0.0	3.1
Cycle Q Clear(g_c), s	2.6	18.0	18.1	8.8	11.9	11.9	12.3	3.3	9.1	10.0	0.0	3.1
Prop In Lane	1.00		0.26	1.00		0.23	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	160	1348	708	297	1610	849	475	622	529	384	0	599
V/C Ratio(X)	0.50	0.84	0.84	0.90	0.58	0.58	0.47	0.23	0.56	0.33	0.00	0.22
Avail Cap(c_a), veh/h	178	1364	717	297	1610	849	687	937	797	544	0	902
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	16.3	16.3	24.3	11.4	11.4	18.7	14.3	16.3	17.9	0.0	14.3
Incr Delay (d2), s/veh	2.4	4.8	8.8	27.8	0.5	1.0	0.7	0.2	0.9	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	9.2	10.5	6.6	5.6	6.0	3.2	1.8	4.1	1.8	0.0	1.5
LnGrp Delay(d),s/veh	28.3	21.1	25.1	52.1	11.9	12.4	19.4	14.5	17.2	18.4	0.0	14.4
LnGrp LOS	C	C	C	D	B	B	B	B	B	B		B
Approach Vol, veh/h		1810			1697			662			257	
Approach Delay, s/veh		22.7			18.4			17.3			16.4	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	2.0	25.7		21.9	7.4	30.3		21.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	22.0		28.0	4.0	26.0		28.0				
Max Q Clear Time (g_c+110), s	20.1	20.1		12.0	4.6	13.9		14.3				
Green Ext Time (p_c), s	0.0	1.6		3.8	0.0	11.3		3.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.9								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↑ ↑ ↑		↖ ↗	↑ ↑ ↑		↖ ↗	↑ ↑	↖	↖	↑ ↑ ↑	↖
Traffic Volume (veh/h)	247	1338	189	186	1158	164	276	788	224	182	628	235
Future Volume (veh/h)	247	1338	189	186	1158	164	276	788	224	182	628	235
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	260	1408	199	196	1219	173	291	829	236	192	661	247
Adj No. of Lanes	2	3	0	1	3	0	2	2	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	391	1680	237	201	1679	238	234	1135	508	181	1804	562
Arrive On Green	0.11	0.37	0.37	0.11	0.37	0.37	0.07	0.32	0.32	0.10	0.35	0.35
Sat Flow, veh/h	3442	4504	636	1774	4501	639	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	260	1060	547	196	918	474	291	829	236	192	661	247
Grp Sat Flow(s),veh/h/ln	1721	1695	1750	1774	1695	1750	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	6.4	25.1	25.1	9.7	20.5	20.5	6.0	18.3	10.5	9.0	8.5	10.5
Cycle Q Clear(g_c), s	6.4	25.1	25.1	9.7	20.5	20.5	6.0	18.3	10.5	9.0	8.5	10.5
Prop In Lane	1.00		0.36	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	391	1264	653	201	1264	653	234	1135	508	181	1804	562
V/C Ratio(X)	0.67	0.84	0.84	0.97	0.73	0.73	1.24	0.73	0.46	1.06	0.37	0.44
Avail Cap(c_a), veh/h	391	1270	656	201	1270	655	234	1205	539	181	1904	593
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	25.2	25.2	38.9	23.8	23.8	41.1	26.6	23.9	39.6	21.1	21.7
Incr Delay (d2), s/veh	4.2	5.1	9.4	55.6	2.1	4.0	139.6	2.2	0.7	83.5	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.5	13.9	7.8	9.9	10.6	7.4	9.2	4.7	8.6	4.0	4.7
LnGrp Delay(d),s/veh	41.7	30.3	34.6	94.5	25.9	27.8	180.6	28.7	24.6	123.1	21.2	22.3
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1867			1588			1356			1100	
Approach Delay, s/veh		33.2			34.9			60.6			39.2	
Approach LOS		C			C			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.0	34.9	8.0	33.3	12.0	34.9	11.0	30.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	31.0	4.0	31.0	8.0	31.0	7.0	28.0				
Max Q Clear Time (g_c+I1), s	27.1	27.1	8.0	12.5	8.4	22.5	11.0	20.3				
Green Ext Time (p_c), s	0.0	3.7	0.0	11.8	0.0	8.0	0.0	5.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				41.1								
HCM 2010 LOS				D								

HCM Signalized Intersection Capacity Analysis  
 10: Palm & Yorba Linda

2040 Base PM  
 07/12/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	1309	401	46	1185	336	50
Future Volume (vph)	1309	401	46	1185	336	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0		2.0	2.0	2.0	
Lane Util. Factor	0.91		1.00	0.95	0.97	
Frt	0.96		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	4906		1770	3539	3395	
Flt Permitted	1.00		0.16	1.00	0.96	
Satd. Flow (perm)	4906		305	3539	3395	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1378	422	48	1247	354	53
RTOR Reduction (vph)	87	0	0	0	18	0
Lane Group Flow (vph)	1713	0	48	1247	389	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	6	
Permitted Phases			8		6	
Actuated Green, G (s)	22.4		22.4	22.4	9.7	
Effective Green, g (s)	24.4		24.4	24.4	11.7	
Actuated g/C Ratio	0.61		0.61	0.61	0.29	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2985		185	2153	990	
v/s Ratio Prot	0.35			c0.35	c0.11	
v/s Ratio Perm			0.16			
v/c Ratio	0.57		0.26	0.58	0.39	
Uniform Delay, d1	4.7		3.6	4.7	11.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.3		0.7	0.4	0.3	
Delay (s)	5.0		4.4	5.1	11.6	
Level of Service	A		A	A	B	
Approach Delay (s)	5.0			5.1	11.6	
Approach LOS	A			A	B	

Intersection Summary

HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	4.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 11: Valencia & Yorba Linda

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1040	44	38	866	127	40	222	47	138	322	266
Future Volume (veh/h)	250	1040	44	38	866	127	40	222	47	138	322	266
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	263	1095	46	40	912	134	42	234	49	145	339	280
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	1680	752	118	1496	642	291	1044	215	450	664	538
Arrive On Green	0.12	0.47	0.47	0.07	0.42	0.42	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	801	2924	602	1092	1859	1508
Grp Volume(v), veh/h	263	1095	46	40	912	134	42	140	143	145	322	297
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	801	1770	1757	1092	1770	1597
Q Serve(g_s), s	7.0	13.9	0.9	1.3	11.8	3.3	2.6	3.3	3.4	6.3	8.5	8.7
Cycle Q Clear(g_c), s	7.0	13.9	0.9	1.3	11.8	3.3	11.2	3.3	3.4	9.7	8.5	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.94
Lane Grp Cap(c), veh/h	211	1680	752	118	1496	642	291	632	627	450	632	570
V/C Ratio(X)	1.25	0.65	0.06	0.34	0.61	0.21	0.14	0.22	0.23	0.32	0.51	0.52
Avail Cap(c_a), veh/h	211	1680	752	180	1620	696	412	900	893	615	900	812
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	11.8	8.4	26.3	13.2	10.8	19.4	13.2	13.3	16.7	14.9	15.0
Incr Delay (d2), s/veh	145.3	0.9	0.0	1.7	0.6	0.2	0.2	0.2	0.2	0.4	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.9	0.4	0.7	5.8	1.4	0.6	1.6	1.7	1.9	4.2	3.9
LnGrp Delay(d),s/veh	171.3	12.7	8.4	28.0	13.8	10.9	19.6	13.4	13.5	17.1	15.5	15.7
LnGrp LOS	F	B	A	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		1404			1086			325			764	
Approach Delay, s/veh		42.3			14.0			14.2			15.9	
Approach LOS		D			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	30.0		23.1	9.0	26.9		23.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	26.0		28.0	5.0	25.0		28.0				
Max Q Clear Time (g_c+13), s	13.3	15.9		11.7	9.0	13.8		13.2				
Green Ext Time (p_c), s	0.0	8.4		6.1	0.0	9.1		5.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				25.5								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
 12: Rose & Yorba Linda

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	131	908	76	224	715	174	178	938	207	165	586	108
Future Volume (veh/h)	131	908	76	224	715	174	178	938	207	165	586	108
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1788	1863	1863	1863
Adj Flow Rate, veh/h	138	956	80	236	753	183	187	987	218	174	617	114
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1223	525	296	1396	600	127	1134	487	127	1134	508
Arrive On Green	0.12	0.35	0.35	0.17	0.39	0.39	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3539	1520	1774	3539	1583
Grp Volume(v), veh/h	138	956	80	236	753	183	187	987	218	174	617	114
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1770	1520	1774	1770	1583
Q Serve(g_s), s	6.2	20.3	3.0	10.7	13.7	7.0	6.0	22.0	9.5	6.0	12.0	4.4
Cycle Q Clear(g_c), s	6.2	20.3	3.0	10.7	13.7	7.0	6.0	22.0	9.5	6.0	12.0	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	1223	525	296	1396	600	127	1134	487	127	1134	508
V/C Ratio(X)	0.66	0.78	0.15	0.80	0.54	0.31	1.47	0.87	0.45	1.37	0.54	0.22
Avail Cap(c_a), veh/h	211	1266	544	296	1434	616	127	1139	489	127	1139	510
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	24.6	19.0	33.6	19.5	17.5	38.9	26.9	22.6	38.9	23.5	20.9
Incr Delay (d2), s/veh	7.2	3.1	0.1	14.1	0.4	0.3	250.7	7.4	0.6	209.0	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	10.4	1.3	6.4	6.8	2.9	11.7	11.9	4.1	10.3	5.9	2.0
LnGrp Delay(d),s/veh	42.6	27.7	19.1	47.7	19.9	17.8	289.7	34.3	23.3	247.9	24.0	21.1
LnGrp LOS	D	C	B	D	B	B	F	C	C	F	C	C
Approach Vol, veh/h		1174			1172			1392			905	
Approach Delay, s/veh		28.9			25.2			66.9			66.7	
Approach LOS		C			C			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	31.0	8.0	28.9	11.9	35.1	8.0	28.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	2.0	28.0	4.0	25.0	8.0	32.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	2.5	22.3	8.0	14.0	8.2	15.7	8.0	24.0				
Green Ext Time (p_c), s	0.0	4.7	0.0	8.1	0.0	11.3	0.0	0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				46.7								
HCM 2010 LOS				D								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↖	↖	↕	↗
Traffic Volume (veh/h)	16	16	6	118	12	78	8	1277	151	75	915	26
Future Volume (veh/h)	16	16	6	118	12	78	8	1277	151	75	915	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	17	6	124	13	82	8	1344	159	79	963	27
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	58	735	106	6	735	70	1260	564	154	1428	639
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.04	0.36	0.36	0.09	0.40	0.40
Sat Flow, veh/h	0	124	1583	0	13	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	34	0	6	137	0	82	8	1344	159	79	963	27
Grp Sat Flow(s),veh/h/ln	124	0	1583	13	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	1.9	0.3	23.0	4.6	2.7	14.4	0.7
Cycle Q Clear(g_c), s	30.0	0.0	0.1	30.0	0.0	1.9	0.3	23.0	4.6	2.7	14.4	0.7
Prop In Lane	0.50		1.00	0.91		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	0	735	112	0	735	70	1260	564	154	1428	639
V/C Ratio(X)	0.24	0.00	0.01	1.22	0.00	0.11	0.11	1.07	0.28	0.51	0.67	0.04
Avail Cap(c_a), veh/h	141	0	735	112	0	735	165	1260	564	165	1428	639
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	0.0	9.3	30.7	0.0	9.8	29.9	20.8	14.9	28.2	15.8	11.7
Incr Delay (d2), s/veh	0.9	0.0	0.0	155.8	0.0	0.1	0.7	45.1	0.3	2.6	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.1	6.8	0.0	0.8	0.2	18.9	2.1	1.5	7.2	0.3
LnGrp Delay(d),s/veh	16.4	0.0	9.3	186.5	0.0	9.8	30.7	65.9	15.2	30.8	17.1	11.7
LnGrp LOS	B		A	F		A	C	F	B	C	B	B
Approach Vol, veh/h		40			219			1511			1069	
Approach Delay, s/veh		15.3			120.3			60.4			17.9	
Approach LOS		B			F			E			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	4.5	28.1		32.0	7.6	25.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		32.0	2.3	16.4		32.0	4.7	25.0				
Green Ext Time (p_c), s		0.0	0.0	4.3		0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			48.4									
HCM 2010 LOS			D									

Intersection

Intersection Delay, s/veh 17.6  
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕				↕		↘	↕	↘
Traffic Vol, veh/h	77	416	18	25	308	146	0	5	39	18	238	37	56
Future Vol, veh/h	77	416	18	25	308	146	0	5	39	18	238	37	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	438	19	26	324	154	0	5	41	19	251	39	59
Number of Lanes	1	2	0	1	2	0	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	3	3
HCM Control Delay	18.2	17.3	13	17.9
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	8%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	63%	0%	100%	89%	0%	100%	41%	0%	100%	0%
Vol Right, %	29%	0%	0%	11%	0%	0%	59%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	77	277	157	25	205	249	238	37	56
LT Vol	5	77	0	0	25	0	0	238	0	0
Through Vol	39	0	277	139	0	205	103	0	37	0
RT Vol	18	0	0	18	0	0	146	0	0	56
Lane Flow Rate	65	81	292	165	26	216	262	251	39	59
Geometry Grp	8	8	8	8	8	8	8	7	7	7
Degree of Util (X)	0.156	0.183	0.618	0.346	0.06	0.464	0.531	0.562	0.082	0.112
Departure Headway (Hd)	8.617	8.137	7.626	7.544	8.236	7.726	7.306	8.073	7.567	6.859
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	415	441	473	477	434	467	492	446	473	522
Service Time	6.389	5.892	5.381	5.299	5.992	5.481	5.061	5.82	5.314	4.605
HCM Lane V/C Ratio	0.157	0.184	0.617	0.346	0.06	0.463	0.533	0.563	0.082	0.113
HCM Control Delay	13	12.7	22	14.3	11.5	17	18.1	20.7	11	10.5
HCM Lane LOS	B	B	C	B	B	C	C	C	B	B
HCM 95th-tile Q	0.5	0.7	4.1	1.5	0.2	2.4	3.1	3.4	0.3	0.4



HCM 2010 Signalized Intersection Summary  
15: Rose & Palm

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	4	563	5	5	8	452	1226	11	8	926	82
Future Volume (veh/h)	61	4	563	5	5	8	452	1226	11	8	926	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	64	4	593	5	5	8	476	1291	12	8	975	86
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	610	902	240	219	498	429	1991	855	60	1254	538
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.24	0.56	0.56	0.03	0.35	0.35
Sat Flow, veh/h	1395	1863	1583	524	669	1520	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	64	4	593	10	0	8	476	1291	12	8	975	86
Grp Sat Flow(s),veh/h/ln	1395	1863	1583	1193	0	1520	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	2.6	0.1	20.2	0.0	0.0	0.3	19.0	19.7	0.3	0.3	19.3	3.0
Cycle Q Clear(g_c), s	2.8	0.1	20.2	0.3	0.0	0.3	19.0	19.7	0.3	0.3	19.3	3.0
Prop In Lane	1.00		1.00	0.50		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	543	610	902	459	0	498	429	1991	855	60	1254	538
V/C Ratio(X)	0.12	0.01	0.66	0.02	0.00	0.02	1.11	0.65	0.01	0.13	0.78	0.16
Avail Cap(c_a), veh/h	620	712	988	521	0	581	429	1991	855	136	1352	581
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	17.8	11.6	17.9	0.0	17.9	29.8	11.8	7.6	36.8	22.6	17.4
Incr Delay (d2), s/veh	0.1	0.0	1.4	0.0	0.0	0.0	76.4	0.7	0.0	1.0	2.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	9.1	0.1	0.0	0.1	18.3	9.7	0.1	0.2	9.8	1.3
LnGrp Delay(d),s/veh	18.9	17.8	13.1	17.9	0.0	17.9	106.2	12.6	7.6	37.8	25.4	17.5
LnGrp LOS	B	B	B	B		B	F	B	A	D	C	B
Approach Vol, veh/h		661			18			1779			1069	
Approach Delay, s/veh		13.7			17.9			37.6			24.8	
Approach LOS		B			B			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.7	21.0	29.8		27.7	4.6	46.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		22.2	21.0	21.3		2.3	2.3	21.7				
Green Ext Time (p_c), s		1.5	0.0	4.5		2.7	0.0	15.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			29.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
 16: Bradford & Madison

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	158	102	113	203	102	99	376	162	92	358	106
Future Volume (veh/h)	105	158	102	113	203	102	99	376	162	92	358	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	111	166	107	119	214	107	104	396	171	97	377	112
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	500	440	359	536	450	383	534	693	589	511	689	562
Arrive On Green	0.11	0.24	0.24	0.11	0.24	0.24	0.11	0.37	0.37	0.10	0.37	0.37
Sat Flow, veh/h	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Grp Volume(v), veh/h	111	166	107	119	214	107	104	396	171	97	377	112
Grp Sat Flow(s),veh/h/ln	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Q Serve(g_s), s	2.0	3.5	2.7	2.1	4.6	2.5	1.5	7.9	3.5	1.4	7.4	2.3
Cycle Q Clear(g_c), s	2.0	3.5	2.7	2.1	4.6	2.5	1.5	7.9	3.5	1.4	7.4	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	500	440	359	536	450	383	534	693	589	511	689	562
V/C Ratio(X)	0.22	0.38	0.30	0.22	0.48	0.28	0.19	0.57	0.29	0.19	0.55	0.20
Avail Cap(c_a), veh/h	536	964	786	677	1084	921	575	1124	956	555	1124	917
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.8	14.8	14.5	10.5	15.1	14.3	7.4	11.6	10.3	7.5	11.5	9.9
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.2	0.8	0.4	0.2	0.7	0.3	0.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.8	1.2	1.1	2.4	1.1	0.7	4.1	1.6	0.7	3.9	1.0
LnGrp Delay(d),s/veh	11.0	15.4	15.0	10.7	15.9	14.7	7.6	12.4	10.5	7.7	12.2	10.1
LnGrp LOS	B	B	B	B	B	B	A	B	B	A	B	B
Approach Vol, veh/h		384			440			671			586	
Approach Delay, s/veh		14.0			14.2			11.1			11.1	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	19.3	7.3	13.0	7.0	19.2	7.1	13.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	7.0	22.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	13.4	9.9	4.1	5.5	3.5	9.4	4.0	6.6				
Green Ext Time (p_c), s	0.0	5.4	0.1	2.7	0.0	5.5	0.0	2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.3								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	30	228	4	16	16	249	1309	7	35	862	119
Future Volume (veh/h)	156	30	228	4	16	16	249	1309	7	35	862	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1900	1863	1863	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	164	32	240	4	17	17	262	1378	7	37	907	125
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	485	477	389	127	408	405	541	1944	835	378	1771	761
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.12	0.55	0.55	0.07	0.50	0.50
Sat Flow, veh/h	1369	1863	1520	158	1596	1583	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	164	32	240	21	0	17	262	1378	7	37	907	125
Grp Sat Flow(s),veh/h/ln	1369	1863	1520	1754	0	1583	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	5.0	0.6	6.9	0.0	0.0	0.4	2.9	14.1	0.1	0.4	8.5	2.2
Cycle Q Clear(g_c), s	5.5	0.6	6.9	0.4	0.0	0.4	2.9	14.1	0.1	0.4	8.5	2.2
Prop In Lane	1.00		1.00	0.19		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	485	477	389	536	0	405	541	1944	835	378	1771	761
V/C Ratio(X)	0.34	0.07	0.62	0.04	0.00	0.04	0.48	0.71	0.01	0.10	0.51	0.16
Avail Cap(c_a), veh/h	2665	3443	2810	3158	0	2927	541	1944	835	464	1941	834
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	13.9	16.2	13.8	0.0	13.8	5.4	8.2	5.0	6.1	8.3	6.7
Incr Delay (d2), s/veh	0.4	0.1	1.6	0.0	0.0	0.0	0.7	1.2	0.0	0.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.3	3.0	0.2	0.0	0.2	1.5	7.0	0.0	0.2	4.1	0.9
LnGrp Delay(d),s/veh	16.3	13.9	17.8	13.8	0.0	13.8	6.1	9.4	5.0	6.2	8.5	6.8
LnGrp LOS	B	B	B	B		B	A	A	A	A	A	A
Approach Vol, veh/h		436			38			1647			1069	
Approach Delay, s/veh		16.9			13.8			8.9			8.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.6	8.0	26.6		14.6	5.6	29.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		89.0	4.0	25.0		89.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s		8.9	4.9	10.5		2.4	2.4	16.1				
Green Ext Time (p_c), s		1.7	0.0	12.2		1.7	0.0	7.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			9.8									
HCM 2010 LOS			A									



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	198	237	1446	295	181	1282		
Future Volume (veh/h)	198	237	1446	295	181	1282		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1788	1863	1863		
Adj Flow Rate, veh/h	208	249	1522	311	191	1349		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	426	381	1678	721	309	2426		
Arrive On Green	0.24	0.24	0.47	0.47	0.17	0.69		
Sat Flow, veh/h	1774	1583	3632	1520	1774	3632		
Grp Volume(v), veh/h	208	249	1522	311	191	1349		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1520	1774	1770		
Q Serve(g_s), s	5.4	7.6	21.4	7.3	5.4	10.4		
Cycle Q Clear(g_c), s	5.4	7.6	21.4	7.3	5.4	10.4		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	426	381	1678	721	309	2426		
V/C Ratio(X)	0.49	0.65	0.91	0.43	0.62	0.56		
Avail Cap(c_a), veh/h	888	793	1678	721	888	3216		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.6	18.5	13.1	9.4	20.6	4.3		
Incr Delay (d2), s/veh	0.9	1.9	7.6	0.4	2.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.8	6.7	12.1	3.1	2.8	4.9		
LnGrp Delay(d),s/veh	18.5	20.4	20.7	9.8	22.6	4.5		
LnGrp LOS	B	C	C	A	C	A		
Approach Vol, veh/h	457		1833			1540		
Approach Delay, s/veh	19.5		18.8			6.8		
Approach LOS	B		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.0		15.0	11.4	27.6
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				47.0		25.0	25.0	18.0
Max Q Clear Time (g_c+I1), s				12.4		9.6	7.4	23.4
Green Ext Time (p_c), s				22.5		1.3	0.5	0.0
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			14.0					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis  
19: Placentia & Nutwood

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	618	41	290	33	56	12	128	715	19	13	520	361
Future Volume (vph)	618	41	290	33	56	12	128	715	19	13	520	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00		1.00	0.94	
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1695	1583	1770	1812		1770	3525		1770	3322	
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.23	1.00		0.30	1.00	
Satd. Flow (perm)	1681	1695	1583	1770	1812		434	3525		554	3322	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	651	43	305	35	59	13	135	753	20	14	547	380
RTOR Reduction (vph)	0	0	236	0	12	0	0	4	0	0	183	0
Lane Group Flow (vph)	345	349	69	35	60	0	135	769	0	14	744	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	5	5		1	1			8				4
Permitted Phases			5				8			4		
Actuated Green, G (s)	6.7	6.7	6.7	1.9	1.9		18.1	18.1		18.1	18.1	
Effective Green, g (s)	8.7	8.7	8.7	3.9	3.9		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.22	0.22	0.22	0.10	0.10		0.52	0.52		0.52	0.52	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	377	381	355	178	182		225	1830		287	1725	
v/s Ratio Prot	0.21	c0.21		0.02	c0.03			0.22				0.22
v/s Ratio Perm			0.04				c0.31			0.03		
v/c Ratio	0.92	0.92	0.19	0.20	0.33		0.60	0.42		0.05	0.43	
Uniform Delay, d1	14.6	14.6	12.2	16.0	16.2		6.5	5.7		4.6	5.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.2	26.1	0.3	0.5	1.1		4.3	0.2		0.1	0.2	
Delay (s)	40.8	40.7	12.4	16.5	17.3		10.8	5.9		4.7	5.9	
Level of Service	D	D	B	B	B		B	A		A	A	
Approach Delay (s)		32.1			17.0			6.6			5.9	
Approach LOS		C			B			A			A	

Intersection Summary

HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 20: Kraemer & Alta Vista

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	62	13	169	90	331	15	1149	220	301	677	101
Future Volume (veh/h)	70	62	13	169	90	331	15	1149	220	301	677	101
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	74	65	14	178	95	348	16	1209	232	317	713	106
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	348	442	95	452	554	471	78	1723	771	229	2025	870
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.04	0.49	0.49	0.13	0.57	0.57
Sat Flow, veh/h	943	1486	320	1314	1863	1583	1774	3539	1583	1774	3539	1520
Grp Volume(v), veh/h	74	0	79	178	95	348	16	1209	232	317	713	106
Grp Sat Flow(s),veh/h/ln	943	0	1806	1314	1863	1583	1774	1770	1583	1774	1770	1520
Q Serve(g_s), s	4.4	0.0	2.2	8.0	2.6	13.8	0.6	18.5	6.1	9.0	7.5	2.2
Cycle Q Clear(g_c), s	7.0	0.0	2.2	10.2	2.6	13.8	0.6	18.5	6.1	9.0	7.5	2.2
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	0	538	452	554	471	78	1723	771	229	2025	870
V/C Ratio(X)	0.21	0.00	0.15	0.39	0.17	0.74	0.20	0.70	0.30	1.38	0.35	0.12
Avail Cap(c_a), veh/h	515	0	856	684	883	751	153	1881	842	229	2034	873
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	18.0	21.7	18.1	22.0	32.1	13.9	10.7	30.3	8.0	6.8
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.6	0.1	2.3	1.3	1.1	0.2	196.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.1	3.0	1.4	6.3	0.3	9.2	2.7	16.9	3.7	0.9
LnGrp Delay(d),s/veh	21.0	0.0	18.1	22.3	18.2	24.3	33.4	15.0	11.0	227.0	8.1	6.9
LnGrp LOS	C		B	C	B	C	C	B	B	F	A	A
Approach Vol, veh/h		153			621			1457			1136	
Approach Delay, s/veh		19.5			22.8			14.5			69.1	
Approach LOS		B			C			B			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.7	5.1	41.8		22.7	11.0	35.9				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		31.0	4.0	38.0		31.0	7.0	35.0				
Max Q Clear Time (g_c+I1), s		9.0	2.6	9.5		15.8	11.0	20.5				
Green Ext Time (p_c), s		3.2	0.0	19.0		2.9	0.0	11.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				34.7								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
 21: Rose & Alta Vista

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	248	106	102	281	115	211	1285	53	128	914	242
Future Volume (veh/h)	301	248	106	102	281	115	211	1285	53	128	914	242
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	317	261	112	107	296	121	222	1353	56	135	962	255
Adj No. of Lanes	1	2	0	1	2	0	2	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	757	316	189	611	244	320	1832	76	320	1860	579
Arrive On Green	0.17	0.31	0.31	0.11	0.25	0.25	0.09	0.37	0.37	0.09	0.37	0.37
Sat Flow, veh/h	1774	2436	1017	1774	2470	988	3442	5009	207	3442	5085	1583
Grp Volume(v), veh/h	317	188	185	107	210	207	222	916	493	135	962	255
Grp Sat Flow(s),veh/h/ln	1774	1770	1683	1774	1770	1688	1721	1695	1826	1721	1695	1583
Q Serve(g_s), s	11.0	5.3	5.5	3.7	6.6	6.8	4.0	15.2	15.2	2.4	9.6	7.9
Cycle Q Clear(g_c), s	11.0	5.3	5.5	3.7	6.6	6.8	4.0	15.2	15.2	2.4	9.6	7.9
Prop In Lane	1.00		0.60	1.00		0.58	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	302	550	523	189	438	417	320	1240	668	320	1860	579
V/C Ratio(X)	1.05	0.34	0.35	0.57	0.48	0.50	0.69	0.74	0.74	0.42	0.52	0.44
Avail Cap(c_a), veh/h	302	1041	990	247	986	941	320	1259	678	320	1889	588
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	17.2	17.2	27.4	20.8	20.9	28.4	17.8	17.8	27.7	16.0	15.5
Incr Delay (d2), s/veh	65.4	0.4	0.4	2.6	0.8	0.9	6.4	2.3	4.2	0.9	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.6	2.6	2.0	3.3	3.3	2.2	7.4	8.3	1.2	4.5	3.5
LnGrp Delay(d),s/veh	92.2	17.5	17.6	30.1	21.6	21.8	34.8	20.1	22.0	28.6	16.3	16.0
LnGrp LOS	F	B	B	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		690			524			1631			1352	
Approach Delay, s/veh		51.8			23.4			22.7			17.4	
Approach LOS		D			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	22.1	8.0	25.6	13.0	18.0	8.0	25.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	36.0	4.0	22.0	9.0	34.0	4.0	22.0					
Max Q Clear Time (g_c+1/5), s	7.5	6.0	11.6	13.0	8.8	4.4	17.2					
Green Ext Time (p_c), s	0.0	5.3	0.0	9.2	0.0	5.2	0.0	4.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				25.9								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
 22: Jefferson & Alta Vista

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	66	335	83	24	212	23	163	67	110	4	18	42
Future Volume (veh/h)	66	335	83	24	212	23	163	67	110	4	18	42
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	69	353	87	25	223	24	172	71	116	4	19	44
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1074	261	170	1118	119	645	583	496	594	554	496
Arrive On Green	0.13	0.38	0.38	0.10	0.35	0.35	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1774	2824	687	1774	3228	344	1334	1863	1583	1192	1770	1583
Grp Volume(v), veh/h	69	220	220	25	121	126	172	71	116	4	19	44
Grp Sat Flow(s),veh/h/ln	1774	1770	1741	1774	1770	1802	1334	1863	1583	1192	1770	1583
Q Serve(g_s), s	1.0	2.5	2.6	0.4	1.4	1.4	3.0	0.8	1.5	0.1	0.2	0.6
Cycle Q Clear(g_c), s	1.0	2.5	2.6	0.4	1.4	1.4	3.5	0.8	1.5	0.8	0.2	0.6
Prop In Lane	1.00		0.39	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	673	662	170	613	624	645	583	496	594	554	496
V/C Ratio(X)	0.30	0.33	0.33	0.15	0.20	0.20	0.27	0.12	0.23	0.01	0.03	0.09
Avail Cap(c_a), veh/h	374	1868	1838	437	1930	1965	1494	1769	1504	1353	1681	1504
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	6.2	6.3	11.8	6.5	6.5	8.1	7.0	7.2	7.3	6.8	6.9
Incr Delay (d2), s/veh	0.7	0.3	0.3	0.4	0.2	0.2	0.2	0.1	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	1.3	0.2	0.7	0.7	1.1	0.4	0.7	0.0	0.1	0.3
LnGrp Delay(d),s/veh	11.9	6.5	6.5	12.2	6.7	6.7	8.4	7.1	7.5	7.3	6.8	7.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		509			272			359			67	
Approach Delay, s/veh		7.3			7.2			7.8			6.9	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	12.8		10.9	5.7	11.8		10.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	28.0	28.0		25.0	4.0	29.0		25.0				
Max Q Clear Time (g_c+1), s	4.6	4.6		2.8	3.0	3.4		5.5				
Green Ext Time (p_c), s	0.0	4.3		1.7	0.0	4.4		1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.4								
HCM 2010 LOS				A								



HCM 2010 Signalized Intersection Summary  
 23: Placentia & Chapman

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↖	↑↑	↗	↔↔	↑↑		↖	↑↑	
Traffic Volume (veh/h)	280	959	211	157	947	172	286	455	169	229	397	193
Future Volume (veh/h)	280	959	211	157	947	172	286	455	169	229	397	193
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	295	1009	222	165	997	181	301	479	178	241	418	203
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	1258	740	198	1302	582	385	719	266	265	746	358
Arrive On Green	0.10	0.36	0.36	0.11	0.37	0.37	0.11	0.28	0.28	0.15	0.32	0.32
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	3442	2532	935	1774	2321	1115
Grp Volume(v), veh/h	295	1009	222	165	997	181	301	334	323	241	318	303
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1721	1770	1698	1774	1770	1666
Q Serve(g_s), s	6.8	20.7	7.0	7.3	19.9	6.6	6.8	13.4	13.5	10.8	11.9	12.2
Cycle Q Clear(g_c), s	6.8	20.7	7.0	7.3	19.9	6.6	6.8	13.4	13.5	10.8	11.9	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		0.67
Lane Grp Cap(c), veh/h	342	1258	740	198	1302	582	385	503	482	265	569	535
V/C Ratio(X)	0.86	0.80	0.30	0.83	0.77	0.31	0.78	0.66	0.67	0.91	0.56	0.57
Avail Cap(c_a), veh/h	342	1276	748	198	1320	591	385	594	570	265	660	621
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	23.4	13.3	35.0	22.4	18.1	34.8	25.4	25.5	33.7	22.6	22.6
Incr Delay (d2), s/veh	19.6	3.7	0.2	24.8	2.7	0.3	10.0	2.2	2.4	32.8	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	10.7	3.1	4.9	10.2	2.9	3.8	6.8	6.6	7.7	6.0	5.7
LnGrp Delay(d),s/veh	55.2	27.1	13.5	59.8	25.1	18.4	44.8	27.6	27.9	66.5	23.4	23.6
LnGrp LOS	E	C	B	E	C	B	D	C	C	E	C	C
Approach Vol, veh/h		1526			1343			958			862	
Approach Delay, s/veh		30.6			28.5			33.1			35.5	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	30.6	11.0	27.8	10.0	31.6	14.0	24.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	27.0	7.0	28.0	6.0	28.0	10.0	25.0				
Max Q Clear Time (g_c+1/3), s	19.3	22.7	8.8	14.2	8.8	21.9	12.8	15.5				
Green Ext Time (p_c), s	0.0	3.9	0.0	6.8	0.0	5.4	0.0	5.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				31.4								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
24: Bradford & Chapman

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	308	845	61	58	832	182	42	187	73	105	151	309
Future Volume (veh/h)	308	845	61	58	832	182	42	187	73	105	151	309
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	324	889	64	61	876	192	44	197	77	111	159	325
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1720	124	136	1119	245	343	776	293	394	575	489
Arrive On Green	0.20	0.51	0.51	0.08	0.39	0.39	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1774	3349	241	1774	2888	633	908	2514	951	1101	1863	1583
Grp Volume(v), veh/h	324	470	483	61	537	531	44	137	137	111	159	325
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1751	908	1770	1695	1101	1863	1583
Q Serve(g_s), s	10.6	10.4	10.4	1.9	15.8	15.8	2.3	3.4	3.6	5.0	3.8	10.6
Cycle Q Clear(g_c), s	10.6	10.4	10.4	1.9	15.8	15.8	6.1	3.4	3.6	8.6	3.8	10.6
Prop In Lane	1.00		0.13	1.00		0.36	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	359	909	935	136	686	678	343	546	523	394	575	489
V/C Ratio(X)	0.90	0.52	0.52	0.45	0.78	0.78	0.13	0.25	0.26	0.28	0.28	0.67
Avail Cap(c_a), veh/h	359	909	935	240	747	739	477	807	773	556	849	722
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	9.5	9.5	26.2	15.9	16.0	17.8	15.3	15.4	18.6	15.5	17.8
Incr Delay (d2), s/veh	24.8	0.5	0.5	2.3	5.0	5.1	0.2	0.2	0.3	0.4	0.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	5.1	5.2	1.0	8.6	8.5	0.6	1.7	1.7	1.6	2.0	4.8
LnGrp Delay(d),s/veh	47.8	10.1	10.0	28.5	21.0	21.0	17.9	15.6	15.7	19.0	15.7	19.4
LnGrp LOS	D	B	B	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		1277			1129			318			595	
Approach Delay, s/veh		19.6			21.4			15.9			18.3	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	32.4		20.3	14.0	24.9		20.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	27.0		25.0	10.0	23.0		25.0				
Max Q Clear Time (g_c+13), s	13.5	12.4		12.6	12.6	17.8		8.1				
Green Ext Time (p_c), s	0.0	10.6		3.7	0.0	3.1		4.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.7								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	457	174	76	519	76	349	1019	145	83	536	205
Future Volume (veh/h)	212	457	174	76	519	76	349	1019	145	83	536	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	223	481	183	80	546	80	367	1073	153	87	564	216
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1177	505	150	1031	443	174	1742	248	149	1362	508
Arrive On Green	0.13	0.33	0.33	0.08	0.29	0.29	0.10	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	4499	641	1774	3651	1362
Grp Volume(v), veh/h	223	481	183	80	546	80	367	808	418	87	523	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1750	1774	1695	1622
Q Serve(g_s), s	9.0	7.5	6.5	3.1	9.2	2.8	7.0	13.7	13.8	3.4	8.2	8.5
Cycle Q Clear(g_c), s	9.0	7.5	6.5	3.1	9.2	2.8	7.0	13.7	13.8	3.4	8.2	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.84
Lane Grp Cap(c), veh/h	223	1177	505	150	1031	443	174	1313	677	149	1265	605
V/C Ratio(X)	1.00	0.41	0.36	0.53	0.53	0.18	2.11	0.62	0.62	0.58	0.41	0.43
Avail Cap(c_a), veh/h	223	1583	680	198	1533	659	174	1469	758	149	1421	680
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	18.5	18.1	31.4	21.2	19.0	32.3	17.6	17.7	31.6	16.6	16.7
Incr Delay (d2), s/veh	60.1	0.2	0.4	2.9	0.4	0.2	520.5	0.6	1.3	5.8	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	3.7	2.8	1.6	4.5	1.2	28.5	6.5	6.9	1.9	3.8	3.9
LnGrp Delay(d),s/veh	91.3	18.7	18.6	34.3	21.7	19.2	552.8	18.3	18.9	37.3	16.8	17.2
LnGrp LOS	F	B	B	C	C	B	F	B	B	D	B	B
Approach Vol, veh/h		887			706			1593			867	
Approach Delay, s/veh		36.9			22.8			141.6			19.0	
Approach LOS		D			C			F			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	25.8	9.0	28.7	11.0	22.8	8.0	29.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+1/5), s	9.5	9.5	9.0	10.5	11.0	11.2	5.4	15.8				
Green Ext Time (p_c), s	0.0	8.1	0.0	12.4	0.0	7.6	0.0	9.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					71.8							
HCM 2010 LOS					E							



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↗		↖	↗	↖
Traffic Volume (veh/h)	136	82	78	241	95	211	73	652	165	104	525	103
Future Volume (veh/h)	136	82	78	241	95	211	73	652	165	104	525	103
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	143	86	82	254	100	222	77	686	174	109	553	108
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	495	330	315	510	700	595	494	1534	389	393	1940	868
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1053	878	837	1212	1863	1583	771	2798	709	640	3539	1583
Grp Volume(v), veh/h	143	0	168	254	100	222	77	434	426	109	553	108
Grp Sat Flow(s),veh/h/ln	1053	0	1715	1212	1863	1583	771	1770	1738	640	1770	1583
Q Serve(g_s), s	5.5	0.0	3.6	9.7	1.9	5.4	3.1	7.7	7.8	6.5	4.4	1.7
Cycle Q Clear(g_c), s	7.3	0.0	3.6	13.3	1.9	5.4	7.6	7.7	7.8	14.2	4.4	1.7
Prop In Lane	1.00		0.49	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	495	0	645	510	700	595	494	970	953	393	1940	868
V/C Ratio(X)	0.29	0.00	0.26	0.50	0.14	0.37	0.16	0.45	0.45	0.28	0.29	0.12
Avail Cap(c_a), veh/h	598	0	812	629	882	750	598	1207	1185	479	2414	1080
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	11.4	16.0	10.9	12.0	8.4	7.1	7.1	11.4	6.4	5.8
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.8	0.1	0.4	0.1	0.3	0.3	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.7	3.4	1.0	2.4	0.7	3.8	3.8	1.2	2.2	0.8
LnGrp Delay(d),s/veh	13.6	0.0	11.6	16.7	11.0	12.3	8.6	7.5	7.5	11.8	6.5	5.8
LnGrp LOS	B		B	B	B	B	A	A	A	B	A	A
Approach Vol, veh/h		311			576			937			770	
Approach Delay, s/veh		12.5			14.0			7.6			7.1	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.9		21.8		30.9		21.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		9.8		9.3		16.2		15.3				
Green Ext Time (p_c), s		12.9		3.5		10.7		2.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				9.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
27: Melrose & Crowther

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	274	145	64	250	57	228	369	49	9	232	36
Future Volume (veh/h)	33	274	145	64	250	57	228	369	49	9	232	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	288	153	67	263	60	240	388	52	9	244	38
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	583	496	174	619	527	248	1087	145	100	807	124
Arrive On Green	0.08	0.31	0.31	0.10	0.33	0.33	0.14	0.35	0.35	0.06	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3141	418	1774	3076	473
Grp Volume(v), veh/h	35	288	153	67	263	60	240	217	223	9	139	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1789	1774	1770	1779
Q Serve(g_s), s	0.8	5.4	3.1	1.5	4.7	1.1	5.8	3.9	4.0	0.2	2.7	2.8
Cycle Q Clear(g_c), s	0.8	5.4	3.1	1.5	4.7	1.1	5.8	3.9	4.0	0.2	2.7	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.27
Lane Grp Cap(c), veh/h	139	583	496	174	619	527	248	613	619	100	464	467
V/C Ratio(X)	0.25	0.49	0.31	0.39	0.42	0.11	0.97	0.35	0.36	0.09	0.30	0.31
Avail Cap(c_a), veh/h	248	1304	1108	248	1304	1108	248	1238	1252	248	1238	1245
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	12.0	11.2	18.1	11.1	9.9	18.3	10.4	10.5	19.2	12.7	12.7
Incr Delay (d2), s/veh	0.9	0.6	0.3	1.4	0.5	0.1	47.6	0.3	0.4	0.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	1.4	0.8	2.5	0.5	6.0	1.9	2.0	0.1	1.4	1.4
LnGrp Delay(d),s/veh	19.5	12.6	11.5	19.5	11.6	10.0	66.0	10.8	10.8	19.6	13.0	13.0
LnGrp LOS	B	B	B	B	B	B	E	B	B	B	B	B
Approach Vol, veh/h		476			390			680			291	
Approach Delay, s/veh		12.8			12.7			30.3			13.2	
Approach LOS		B			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	15.4	8.0	13.2	5.4	16.3	4.4	16.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	28.0	4.0	28.0	4.0	28.0				
Max Q Clear Time (g_c+1), s	4.0	7.4	7.8	4.8	2.8	6.7	2.2	6.0				
Green Ext Time (p_c), s	0.0	4.0	0.0	4.5	0.0	4.1	0.0	4.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.3								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	114	42	0	164	206	78	1223	1	69	658	80
Future Volume (veh/h)	87	114	42	0	164	206	78	1223	1	69	658	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	92	120	44	0	173	217	82	1287	1	73	693	84
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	712	605	3	452	384	168	2184	2	157	1450	649
Arrive On Green	0.10	0.38	0.38	0.00	0.24	0.24	0.09	0.42	0.42	0.09	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5248	4	1774	3539	1583
Grp Volume(v), veh/h	92	120	44	0	173	217	82	831	457	73	693	84
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1862	1774	1770	1583
Q Serve(g_s), s	2.6	2.3	0.9	0.0	4.1	6.4	2.3	10.1	10.1	2.1	7.6	1.8
Cycle Q Clear(g_c), s	2.6	2.3	0.9	0.0	4.1	6.4	2.3	10.1	10.1	2.1	7.6	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	712	605	3	452	384	168	1411	775	157	1450	649
V/C Ratio(X)	0.51	0.17	0.07	0.00	0.38	0.57	0.49	0.59	0.59	0.47	0.48	0.13
Avail Cap(c_a), veh/h	201	1053	895	201	1053	895	201	1533	842	234	1667	746
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	10.8	10.4	0.0	16.8	17.6	22.8	12.0	12.0	23.0	11.5	9.8
Incr Delay (d2), s/veh	2.2	0.1	0.1	0.0	0.5	1.3	2.2	0.5	0.9	2.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	0.4	0.0	2.2	2.9	1.2	4.7	5.3	1.1	3.7	0.8
LnGrp Delay(d),s/veh	24.8	10.9	10.5	0.0	17.3	19.0	25.0	12.5	12.9	25.1	11.7	9.9
LnGrp LOS	C	B	B		B	B	C	B	B	C	B	A
Approach Vol, veh/h		256			390			1370			850	
Approach Delay, s/veh		15.8			18.2			13.4			12.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	22.3	7.0	23.7	7.4	14.9	6.7	24.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	23.0	4.0	28.0	5.0	22.0				
Max Q Clear Time (g_c+10), s	4.0	4.3	4.3	9.6	4.6	8.4	4.1	12.1				
Green Ext Time (p_c), s	0.0	2.6	0.0	10.1	0.0	2.5	0.0	7.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
 29: Placentia & Orangethorpe

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘	↗ ↘		↔ ↗ ↘	↗ ↘	↗	↔ ↗	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘
Traffic Volume (veh/h)	209	762	69	189	966	203	62	389	115	273	448	329
Future Volume (veh/h)	209	762	69	189	966	203	62	389	115	273	448	329
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	220	802	73	199	1017	0	65	409	121	287	472	346
Adj No. of Lanes	1	3	0	1	3	1	1	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1728	157	187	1650	514	128	1129	505	364	688	503
Arrive On Green	0.15	0.36	0.36	0.11	0.32	0.00	0.07	0.32	0.32	0.11	0.35	0.35
Sat Flow, veh/h	1774	4747	430	1774	5085	1583	1774	3539	1583	3442	1953	1427
Grp Volume(v), veh/h	220	572	303	199	1017	0	65	409	121	287	428	390
Grp Sat Flow(s),veh/h/ln	1774	1695	1787	1774	1695	1583	1774	1770	1583	1721	1770	1611
Q Serve(g_s), s	9.2	9.8	9.8	8.0	12.8	0.0	2.7	6.7	4.3	6.2	15.6	15.7
Cycle Q Clear(g_c), s	9.2	9.8	9.8	8.0	12.8	0.0	2.7	6.7	4.3	6.2	15.6	15.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	258	1234	650	187	1650	514	128	1129	505	364	624	568
V/C Ratio(X)	0.85	0.46	0.47	1.06	0.62	0.00	0.51	0.36	0.24	0.79	0.69	0.69
Avail Cap(c_a), veh/h	258	1343	708	187	1813	564	141	1449	648	364	771	702
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	18.4	18.4	33.9	21.6	0.0	33.8	19.9	19.0	33.0	20.9	21.0
Incr Delay (d2), s/veh	23.3	0.3	0.5	83.1	0.5	0.0	3.1	0.2	0.2	11.1	1.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	4.6	4.9	8.2	6.0	0.0	1.4	3.3	1.9	3.5	7.9	7.3
LnGrp Delay(d),s/veh	54.8	18.7	19.0	117.0	22.2	0.0	36.9	20.0	19.3	44.2	22.8	23.1
LnGrp LOS	D	B	B	F	C		D	C	B	D	C	C
Approach Vol, veh/h		1095			1216			595			1105	
Approach Delay, s/veh		26.0			37.7			21.7			28.5	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	29.6	7.5	28.7	13.0	26.6	10.0	26.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	0.0	28.0	4.0	31.0	9.0	25.0	6.0	29.0				
Max Q Clear Time (g_c+110), s	0.0	11.8	4.7	17.7	11.2	14.8	8.2	8.7				
Green Ext Time (p_c), s	0.0	11.2	0.0	7.0	0.0	7.8	0.0	8.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					29.6							
HCM 2010 LOS					C							

HCM Signalized Intersection Capacity Analysis  
30: SR57 SB Ramp & Orangethorpe

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↔		↔	↑↑↑	↔		↑	↔	↔	↔	↔
Traffic Volume (vph)	280	970	3	14	1057	426	5	5	12	179	2	241
Future Volume (vph)	280	970	3	14	1057	426	5	5	12	179	2	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	9	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5083		1770	5085	1583		1696	1425	1681	1519	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5083		1770	5085	1583		1696	1425	1681	1519	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	295	1021	3	15	1113	448	5	5	13	188	2	254
RTOR Reduction (vph)	0	0	0	0	0	169	0	0	12	0	189	0
Lane Group Flow (vph)	295	1024	0	15	1113	279	0	10	1	169	86	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	4.2	29.2		0.5	25.5	25.5		1.3	1.3	13.4	13.4	
Effective Green, g (s)	6.2	31.2		2.5	27.5	27.5		3.3	3.3	15.4	15.4	
Actuated g/C Ratio	0.10	0.52		0.04	0.46	0.46		0.05	0.05	0.25	0.25	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	352	2625		73	2315	720		92	77	428	387	
v/s Ratio Prot	c0.09	0.20		0.01	c0.22			c0.01		c0.10	0.06	
v/s Ratio Perm						0.18			0.00			
v/c Ratio	0.84	0.39		0.21	0.48	0.39		0.11	0.01	0.39	0.22	
Uniform Delay, d1	26.6	8.8		28.0	11.5	10.9		27.2	27.0	18.6	17.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.8	0.1		1.4	0.2	0.3		0.5	0.0	0.6	0.3	
Delay (s)	42.4	8.9		29.4	11.6	11.2		27.7	27.1	19.2	18.1	
Level of Service	D	A		C	B	B		C	C	B	B	
Approach Delay (s)		16.4			11.7			27.3			18.5	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑			↑↑↑		↖↗		↗			
Traffic Volume (veh/h)	214	947	0	0	1256	491	194	0	733	0	0	0
Future Volume (veh/h)	214	947	0	0	1256	491	194	0	733	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	225	997	0	0	1322	517	204	0	772			
Adj No. of Lanes	2	3	0	0	3	0	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	295	2179	0	0	1134	440	1770	0	814			
Arrive On Green	0.09	0.43	0.00	0.00	0.31	0.31	0.51	0.00	0.51			
Sat Flow, veh/h	3442	5253	0	0	3775	1399	3442	0	1583			
Grp Volume(v), veh/h	225	997	0	0	1242	597	204	0	772			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1616	1721	0	1583			
Q Serve(g_s), s	4.5	9.8	0.0	0.0	22.0	22.0	2.1	0.0	32.4			
Cycle Q Clear(g_c), s	4.5	9.8	0.0	0.0	22.0	22.0	2.1	0.0	32.4			
Prop In Lane	1.00		0.00	0.00		0.87	1.00		1.00			
Lane Grp Cap(c), veh/h	295	2179	0	0	1065	508	1770	0	814			
V/C Ratio(X)	0.76	0.46	0.00	0.00	1.17	1.18	0.12	0.00	0.95			
Avail Cap(c_a), veh/h	295	2179	0	0	1065	508	1770	0	814			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	31.3	14.2	0.0	0.0	24.0	24.0	8.8	0.0	16.1			
Incr Delay (d2), s/veh	11.2	0.2	0.0	0.0	84.9	98.3	0.0	0.0	20.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	4.6	0.0	0.0	22.8	23.6	1.0	0.0	18.5			
LnGrp Delay(d),s/veh	42.5	14.4	0.0	0.0	108.9	122.3	8.8	0.0	36.1			
LnGrp LOS	D	B			F	F	A		D			
Approach Vol, veh/h		1222			1839			976				
Approach Delay, s/veh		19.5			113.2			30.4				
Approach LOS		B			F			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.0			8.0	24.0		38.0				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		11.8			6.5	24.0		34.4				
Green Ext Time (p_c), s		14.6			0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					64.8							
HCM 2010 LOS					E							

HCM 2010 Signalized Intersection Summary  
 32: Melrose & Orangethorpe

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↖	↗		↖	↗	
Traffic Volume (veh/h)	108	1048	226	51	829	65	535	446	76	74	240	258
Future Volume (veh/h)	108	1048	226	51	829	65	535	446	76	74	240	258
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	114	1103	238	54	873	68	563	469	80	78	253	272
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1508	325	237	1656	129	272	1098	186	152	521	467
Arrive On Green	0.08	0.36	0.36	0.07	0.34	0.34	0.15	0.36	0.36	0.09	0.29	0.29
Sat Flow, veh/h	3442	4190	904	3442	4813	374	1774	3028	514	1774	1770	1583
Grp Volume(v), veh/h	114	892	449	54	614	327	563	273	276	78	253	272
Grp Sat Flow(s),veh/h/ln	1721	1695	1703	1721	1695	1797	1774	1770	1772	1774	1770	1583
Q Serve(g_s), s	2.0	14.9	14.9	1.0	9.4	9.5	10.0	7.6	7.7	2.7	7.7	9.5
Cycle Q Clear(g_c), s	2.0	14.9	14.9	1.0	9.4	9.5	10.0	7.6	7.7	2.7	7.7	9.5
Prop In Lane	1.00		0.53	1.00		0.21	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	292	1220	613	237	1167	618	272	641	642	152	521	467
V/C Ratio(X)	0.39	0.73	0.73	0.23	0.53	0.53	2.07	0.43	0.43	0.51	0.49	0.58
Avail Cap(c_a), veh/h	317	1249	628	317	1249	662	272	842	843	163	734	656
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	18.1	18.1	28.7	17.1	17.1	27.6	15.7	15.7	28.5	18.9	19.6
Incr Delay (d2), s/veh	0.8	2.2	4.3	0.5	0.4	0.7	492.6	0.4	0.5	2.7	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.3	7.7	0.5	4.5	4.8	42.1	3.8	3.8	1.5	3.8	4.3
LnGrp Delay(d),s/veh	29.1	20.3	22.4	29.2	17.5	17.8	520.2	16.1	16.1	31.1	19.6	20.7
LnGrp LOS	C	C	C	C	B	B	F	B	B	C	B	C
Approach Vol, veh/h		1455			995			1112			603	
Approach Delay, s/veh		21.6			18.2			271.3			21.6	
Approach LOS		C			B			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	25.4	12.0	21.2	7.5	24.4	7.6	25.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+13), s	13.0	16.9	12.0	11.5	4.0	11.5	4.7	9.7				
Green Ext Time (p_c), s	0.0	4.5	0.0	5.7	0.0	8.8	0.0	6.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					87.5							
HCM 2010 LOS					F							

HCM 2010 Signalized Intersection Summary  
33: Kraemer & Orangethorpe

2040 Base PM  
07/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	728	220	88	458	40	328	1036	145	31	508	163
Future Volume (veh/h)	255	728	220	88	458	40	328	1036	145	31	508	163
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	268	766	232	93	482	42	345	1091	153	33	535	172
Adj No. of Lanes	1	2	1	1	3	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1158	518	165	1513	130	252	1502	672	92	1184	530
Arrive On Green	0.10	0.33	0.33	0.09	0.32	0.32	0.14	0.42	0.42	0.05	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	4770	411	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	268	766	232	93	341	183	345	1091	153	33	535	172
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1790	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.0	14.4	9.0	3.9	5.9	6.0	11.0	19.9	4.8	1.4	9.2	6.3
Cycle Q Clear(g_c), s	8.0	14.4	9.0	3.9	5.9	6.0	11.0	19.9	4.8	1.4	9.2	6.3
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	183	1158	518	165	1075	568	252	1502	672	92	1184	530
V/C Ratio(X)	1.46	0.66	0.45	0.56	0.32	0.32	1.37	0.73	0.23	0.36	0.45	0.32
Avail Cap(c_a), veh/h	183	1369	613	412	1749	924	252	1643	735	183	1506	674
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	22.4	20.6	33.7	20.1	20.1	33.3	18.6	14.2	35.5	20.2	19.3
Incr Delay (d2), s/veh	236.3	0.9	0.6	3.0	0.2	0.3	190.1	1.5	0.2	2.3	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.9	7.2	4.0	2.0	2.8	3.0	18.6	10.0	2.1	0.7	4.5	2.8
LnGrp Delay(d),s/veh	271.1	23.3	21.2	36.7	20.3	20.5	223.3	20.0	14.4	37.8	20.5	19.6
LnGrp LOS	F	C	C	D	C	C	F	C	B	D	C	B
Approach Vol, veh/h		1266			617			1589			740	
Approach Delay, s/veh		75.4			22.8			63.6			21.1	
Approach LOS		E			C			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	27.4	13.0	27.9	10.0	26.6	6.0	34.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	28.0	9.0	31.0	6.0	38.0	6.0	34.0				
Max Q Clear Time (g_c+I1), s	5.9	16.4	13.0	11.2	10.0	8.0	3.4	21.9				
Green Ext Time (p_c), s	0.1	7.0	0.0	12.8	0.0	11.9	0.0	8.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			53.7									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis  
 34: Miller/Crowther & Orangethorpe

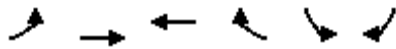
2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↖↗		↖	↗↖↗	↖	↖	↗	↖	↖	↗	↖
Traffic Volume (vph)	3	727	67	48	378	94	154	262	158	82	84	1
Future Volume (vph)	3	727	67	48	378	94	154	262	158	82	84	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	9	12	12	12	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5021		1770	4746	1425	1681	1765	1583	1681	1762	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5021		1770	4746	1425	1681	1765	1583	1681	1762	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	3	836	77	55	434	108	177	301	182	94	97	1
RTOR Reduction (vph)	0	11	0	0	0	60	0	0	157	0	0	1
Lane Group Flow (vph)	3	902	0	55	434	48	159	319	25	85	106	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		7	7	
Permitted Phases						6			3			7
Actuated Green, G (s)	2.2	18.7		3.4	19.9	19.9	4.7	4.7	4.7	6.8	6.8	6.8
Effective Green, g (s)	4.2	20.7		5.4	21.9	21.9	6.7	6.7	6.7	8.8	8.8	8.8
Actuated g/C Ratio	0.08	0.42		0.11	0.44	0.44	0.14	0.14	0.14	0.18	0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Lane Grp Cap (vph)	149	2095		192	2095	629	227	238	213	298	312	280
v/s Ratio Prot	0.00	c0.18		c0.03	0.09		0.09	c0.18		0.05	c0.06	
v/s Ratio Perm						0.03			0.02			0.00
v/c Ratio	0.02	0.43		0.29	0.21	0.08	0.70	1.34	0.12	0.29	0.34	0.00
Uniform Delay, d1	20.8	10.3		20.3	8.5	8.0	20.5	21.4	18.8	17.7	17.9	16.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1		0.8	0.0	0.1	9.4	178.7	0.2	0.5	0.7	0.0
Delay (s)	20.9	10.4		21.2	8.6	8.1	29.9	200.1	19.1	18.2	18.5	16.8
Level of Service	C	B		C	A	A	C	F	B	B	B	B
Approach Delay (s)		10.4			9.6			109.2			18.4	
Approach LOS		B			A			F			B	

Intersection Summary

HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖	↑↑↑	↑↑↑		↖↗	↖		
Traffic Volume (veh/h)	69	898	488	552	362	32		
Future Volume (veh/h)	69	898	488	552	362	32		
Number	5	2	6	16	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	73	945	514	581	381	34		
Adj No. of Lanes	1	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	172	3542	1885	880	743	342		
Arrive On Green	0.10	0.70	0.56	0.56	0.22	0.22		
Sat Flow, veh/h	1774	5253	3558	1583	3442	1583		
Grp Volume(v), veh/h	73	945	514	581	381	34		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1721	1583		
Q Serve(g_s), s	1.8	3.2	3.6	11.7	4.5	0.8		
Cycle Q Clear(g_c), s	1.8	3.2	3.6	11.7	4.5	0.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	172	3542	1885	880	743	342		
V/C Ratio(X)	0.43	0.27	0.27	0.66	0.51	0.10		
Avail Cap(c_a), veh/h	233	4011	2080	971	2262	1041		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.4	2.6	5.3	7.1	15.8	14.3		
Incr Delay (d2), s/veh	1.7	0.0	0.1	1.5	0.5	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.0	1.4	1.7	5.4	2.2	0.4		
LnGrp Delay(d),s/veh	21.1	2.6	5.4	8.6	16.3	14.5		
LnGrp LOS	C	A	A	A	B	B		
Approach Vol, veh/h		1018	1095		415			
Approach Delay, s/veh		3.9	7.1		16.2			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		33.8			6.4	27.4		11.9
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		34.0			4.0	26.0		28.0
Max Q Clear Time (g_c+I1), s		5.2			3.8	13.7		6.5
Green Ext Time (p_c), s		18.3			0.0	9.6		1.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			7.3					
HCM 2010 LOS			A					

HCM Signalized Intersection Capacity Analysis  
 36: Del Cerro Drive & Rose

2040 Base PM  
 07/12/2018



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	86	171	1460	169	61	1074
Future Volume (vph)	86	171	1460	169	61	1074
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.93	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3264	1441	3539	1583	1770	3539
Flt Permitted	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3264	1441	3539	1583	1770	3539
Peak-hour factor, PHF	0.92	0.95	0.92	0.92	0.95	0.92
Adj. Flow (vph)	93	180	1587	184	64	1167
RTOR Reduction (vph)	80	80	0	55	0	0
Lane Group Flow (vph)	103	10	1587	129	64	1167
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	3.6	3.6	34.2	34.2	2.0	40.2
Effective Green, g (s)	5.6	5.6	36.2	36.2	4.0	42.2
Actuated g/C Ratio	0.11	0.11	0.70	0.70	0.08	0.81
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	352	155	2473	1106	136	2883
v/s Ratio Prot	c0.03		c0.45		c0.04	0.33
v/s Ratio Perm		0.01		0.08		
v/c Ratio	0.29	0.06	0.64	0.12	0.47	0.40
Uniform Delay, d1	21.3	20.7	4.3	2.6	22.9	1.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.6	0.0	2.6	0.1
Delay (s)	21.7	20.9	4.8	2.6	25.4	1.4
Level of Service	C	C	A	A	C	A
Approach Delay (s)	21.5		4.6			2.7
Approach LOS	C		A			A

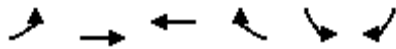
Intersection Summary

HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 37: Orangethorpe & Del Cerro Drive

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↔↔	↑↑↑	↑↑↑		↔	↔↔		
Traffic Volume (veh/h)	156	992	559	104	90	146		
Future Volume (veh/h)	156	992	559	104	90	146		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	170	1078	608	113	98	159		
Adj No. of Lanes	2	3	3	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	482	3644	2264	415	317	497		
Arrive On Green	0.14	0.72	0.52	0.52	0.18	0.18		
Sat Flow, veh/h	3442	5253	4490	791	1774	2787		
Grp Volume(v), veh/h	170	1078	475	246	98	159		
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1723	1774	1393		
Q Serve(g_s), s	1.7	2.9	3.0	3.0	1.8	1.9		
Cycle Q Clear(g_c), s	1.7	2.9	3.0	3.0	1.8	1.9		
Prop In Lane	1.00			0.46	1.00	1.00		
Lane Grp Cap(c), veh/h	482	3644	1776	903	317	497		
V/C Ratio(X)	0.35	0.30	0.27	0.27	0.31	0.32		
Avail Cap(c_a), veh/h	632	4938	2491	1266	1816	2852		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.8	1.9	5.0	5.0	13.6	13.6		
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.2	0.5	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	1.3	1.4	1.5	0.9	1.6		
LnGrp Delay(d),s/veh	15.3	2.0	5.1	5.2	14.2	14.0		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		1248	721		257			
Approach Delay, s/veh		3.8	5.1		14.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				29.3		8.8	7.3	22.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				35.0		37.0	5.0	26.0
Max Q Clear Time (g_c+I1), s				4.9		3.9	3.7	5.0
Green Ext Time (p_c), s				16.1		0.9	0.1	12.9
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			5.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary  
 38: Jefferson & Orangethorpe

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1035	40	22	713	51	47	258	83	45	63	57
Future Volume (veh/h)	97	1035	40	22	713	51	47	258	83	45	63	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	102	1089	42	23	751	54	49	272	87	47	66	60
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	1712	66	107	1567	673	137	577	181	135	403	342
Arrive On Green	0.11	0.49	0.49	0.06	0.44	0.44	0.08	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	1774	3475	134	1774	3539	1520	1774	2654	831	1774	1863	1583
Grp Volume(v), veh/h	102	555	576	23	751	54	49	179	180	47	66	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1839	1774	1770	1520	1774	1770	1716	1774	1863	1583
Q Serve(g_s), s	2.8	12.1	12.1	0.6	7.8	1.1	1.4	4.6	4.8	1.3	1.5	1.6
Cycle Q Clear(g_c), s	2.8	12.1	12.1	0.6	7.8	1.1	1.4	4.6	4.8	1.3	1.5	1.6
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	195	872	906	107	1567	673	137	385	373	135	403	342
V/C Ratio(X)	0.52	0.64	0.64	0.22	0.48	0.08	0.36	0.47	0.48	0.35	0.16	0.18
Avail Cap(c_a), veh/h	204	952	989	204	1903	817	204	918	890	204	966	821
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	9.8	9.8	23.3	10.3	8.4	22.8	17.7	17.8	22.8	16.6	16.6
Incr Delay (d2), s/veh	2.2	1.2	1.2	1.0	0.2	0.1	1.6	0.9	1.0	1.5	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.2	6.4	0.3	3.8	0.5	0.7	2.3	2.3	0.7	0.8	0.7
LnGrp Delay(d),s/veh	24.1	11.0	11.0	24.3	10.5	8.4	24.4	18.6	18.8	24.3	16.8	16.9
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		1233			828			408			173	
Approach Delay, s/veh		12.1			10.7			19.4			18.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	27.7	6.0	13.3	7.7	25.1	6.0	13.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	4.0	25.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1/2g), s	12.6	14.1	3.4	3.6	4.8	9.8	3.3	6.8				
Green Ext Time (p_c), s	0.0	8.9	0.0	2.7	0.0	11.2	0.0	2.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.2								
HCM 2010 LOS				B								



HCM 2010 Signalized Intersection Summary  
 39: Van Buren & Orangethorpe

2040 Base PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↑	↗	↖	↑	↗
Traffic Volume (veh/h)	140	983	40	24	674	57	50	172	71	50	91	62
Future Volume (veh/h)	140	983	40	24	674	57	50	172	71	50	91	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	147	983	42	25	709	60	53	181	75	53	96	65
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1634	70	116	1459	627	149	392	333	149	392	333
Arrive On Green	0.13	0.47	0.47	0.07	0.41	0.41	0.08	0.21	0.21	0.08	0.21	0.21
Sat Flow, veh/h	1774	3459	148	1774	3539	1520	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	147	503	522	25	709	60	53	181	75	53	96	65
Grp Sat Flow(s),veh/h/ln	1774	1770	1837	1774	1770	1520	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.8	10.0	10.0	0.6	7.0	1.2	1.3	4.1	1.9	1.3	2.0	1.6
Cycle Q Clear(g_c), s	3.8	10.0	10.0	0.6	7.0	1.2	1.3	4.1	1.9	1.3	2.0	1.6
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	836	868	116	1459	627	149	392	333	149	392	333
V/C Ratio(X)	0.66	0.60	0.60	0.22	0.49	0.10	0.35	0.46	0.23	0.35	0.24	0.20
Avail Cap(c_a), veh/h	223	836	868	334	1854	796	223	1171	995	223	1171	995
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	9.3	9.3	21.1	10.3	8.6	20.6	16.5	15.6	20.6	15.7	15.5
Incr Delay (d2), s/veh	7.0	1.2	1.2	0.9	0.3	0.1	1.4	0.8	0.3	1.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.0	5.2	0.3	3.4	0.5	0.7	2.2	0.8	0.7	1.1	0.7
LnGrp Delay(d),s/veh	26.9	10.5	10.5	22.1	10.6	8.7	22.1	17.3	16.0	22.1	16.0	15.8
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		1172			794			309			214	
Approach Delay, s/veh		12.5			10.8			17.8			17.4	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	24.5	6.0	12.0	8.0	21.7	6.0	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	20.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+1/2g), s	12.0	12.0	3.3	4.0	5.8	9.0	3.3	6.1				
Green Ext Time (p_c), s	0.0	6.0	0.0	2.0	0.0	8.6	0.0	2.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
40: Richfield & Orangethorpe

2040 Base PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	905	52	57	601	112	55	472	93	77	230	82
Future Volume (veh/h)	189	905	52	57	601	112	55	472	93	77	230	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	199	953	55	60	633	118	58	497	98	81	242	86
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	1390	622	136	1299	558	134	895	176	161	822	285
Arrive On Green	0.10	0.39	0.39	0.08	0.37	0.37	0.08	0.30	0.30	0.09	0.32	0.32
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	1774	2951	579	1774	2581	894
Grp Volume(v), veh/h	199	953	55	60	633	118	58	297	298	81	164	164
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	1774	1770	1761	1774	1770	1705
Q Serve(g_s), s	6.0	13.1	1.3	1.9	8.1	3.1	1.8	8.2	8.3	2.6	4.1	4.3
Cycle Q Clear(g_c), s	6.0	13.1	1.3	1.9	8.1	3.1	1.8	8.2	8.3	2.6	4.1	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.52
Lane Grp Cap(c), veh/h	181	1390	622	136	1299	558	134	537	534	161	564	543
V/C Ratio(X)	1.10	0.69	0.09	0.44	0.49	0.21	0.43	0.55	0.56	0.50	0.29	0.30
Avail Cap(c_a), veh/h	181	1509	675	181	1509	648	181	905	901	181	905	872
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	14.8	11.2	25.9	14.3	12.7	25.9	17.1	17.1	25.4	15.0	15.1
Incr Delay (d2), s/veh	95.0	1.2	0.1	2.2	0.3	0.2	2.2	0.9	0.9	2.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	6.6	0.6	1.0	4.0	1.3	1.0	4.1	4.2	1.3	2.0	2.1
LnGrp Delay(d),s/veh	121.3	16.0	11.3	28.1	14.6	12.9	28.1	18.0	18.1	27.8	15.3	15.4
LnGrp LOS	F	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1207			811			653			409	
Approach Delay, s/veh		33.1			15.3			18.9			17.8	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	25.0	6.4	20.7	8.0	23.5	7.3	19.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+13), s	13.5	15.1	3.8	6.3	8.0	10.1	4.6	10.3				
Green Ext Time (p_c), s	0.0	5.9	0.0	5.9	0.0	8.8	0.0	5.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				23.4								
HCM 2010 LOS				C								

**Intersection**

Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	90	226	31	30	274	27	48	169	13	11	144	42
Future Vol, veh/h	90	226	31	30	274	27	48	169	13	11	144	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	238	33	32	288	28	51	178	14	12	152	44
Number of Lanes	1	2	0	1	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay	12.7	13.5	13.1	12.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	
Vol Left, %		36%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %		64%	87%	0%	100%	71%	0%	100%	77%	87%	63%
Vol Right, %		0%	13%	0%	0%	29%	0%	0%	23%	0%	37%
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane		133	98	90	151	106	30	183	118	83	114
LT Vol		48	0	90	0	0	30	0	0	11	0
Through Vol		85	85	0	151	75	0	183	91	72	72
RT Vol		0	13	0	0	31	0	0	27	0	42
Lane Flow Rate		139	103	95	159	112	32	192	125	87	120
Geometry Grp		8	8	8	8	8	8	8	8	8	8
Degree of Util (X)		0.299	0.212	0.205	0.321	0.22	0.069	0.391	0.248	0.187	0.246
Departure Headway (Hd)		7.717	7.441	7.806	7.295	7.087	7.84	7.329	7.166	7.715	7.388
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap		466	482	460	493	507	457	490	501	465	486
Service Time		5.465	5.188	5.551	5.04	4.831	5.585	5.074	4.911	5.466	5.139
HCM Lane V/C Ratio		0.298	0.214	0.207	0.323	0.221	0.07	0.392	0.25	0.187	0.247
HCM Control Delay		13.7	12.2	12.6	13.5	11.8	11.2	14.7	12.3	12.2	12.5
HCM Lane LOS		B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q		1.2	0.8	0.8	1.4	0.8	0.2	1.8	1	0.7	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	62	178	68	32	183	51	78	441	17	31	314	39
Future Volume (veh/h)	62	178	68	32	183	51	78	441	17	31	314	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	65	187	72	34	193	54	82	464	18	33	331	41
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	667	248	387	726	198	770	2247	87	699	2053	252
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1128	2526	940	1116	2750	750	1006	3474	135	909	3174	390
Grp Volume(v), veh/h	65	129	130	34	122	125	82	236	246	33	183	189
Grp Sat Flow(s),veh/h/ln	1128	1770	1697	1116	1770	1730	1006	1770	1839	909	1770	1794
Q Serve(g_s), s	2.2	2.6	2.7	1.1	2.5	2.6	1.6	2.4	2.4	0.7	1.8	1.9
Cycle Q Clear(g_c), s	4.7	2.6	2.7	3.9	2.5	2.6	3.4	2.4	2.4	3.1	1.8	1.9
Prop In Lane	1.00		0.55	1.00		0.43	1.00		0.07	1.00		0.22
Lane Grp Cap(c), veh/h	394	467	448	387	467	457	770	1145	1190	699	1145	1160
V/C Ratio(X)	0.16	0.28	0.29	0.09	0.26	0.27	0.11	0.21	0.21	0.05	0.16	0.16
Avail Cap(c_a), veh/h	776	1066	1022	764	1066	1042	770	1145	1190	699	1145	1160
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	13.1	13.2	14.7	13.0	13.1	3.8	3.2	3.2	3.9	3.1	3.1
Incr Delay (d2), s/veh	0.2	0.3	0.4	0.1	0.3	0.3	0.3	0.4	0.4	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.3	1.3	0.4	1.2	1.3	0.5	1.3	1.4	0.2	1.0	1.0
LnGrp Delay(d),s/veh	15.2	13.4	13.5	14.8	13.3	13.4	4.1	3.6	3.6	4.0	3.4	3.4
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		324			281			564			405	
Approach Delay, s/veh		13.8			13.5			3.7			3.5	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		13.8		31.0		13.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		5.4		6.7		5.1		5.9				
Green Ext Time (p_c), s		5.7		3.1		5.7		3.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.5								
HCM 2010 LOS				A								

# **APPENDIX H – PROPOSED GENERAL PLAN INTERSECTION OPERATIONS ANALYSIS WORKSHEETS, WITH EXISTING GEOMETRY**

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Scenario Report

Scenario: Proposed GP AM

Command: Proposed GP AM  
 Volume: 2040 Base AM  
 Geometry: Existing  
 Impact Fee: Default Impact Fee  
 Trip Generation: AM  
 Trip Distribution: Project  
 Paths: Default Path  
 Routes: Default Route  
 Configuration: Default Configuration

Trip Generation Report

Forecast for AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Zone 1	1.00	Project	-10.00	21.00	-10	21	11	11.5
	Zone 1 Subtotal					-10	21	11	11.5
2	Zone 2	1.00	Project	-1.00	24.00	-1	24	23	24.0
	Zone 2 Subtotal					-1	24	23	24.0
3	Zone 3	1.00	Project	-3.00	38.00	-3	38	35	36.5
	Zone 3 Subtotal					-3	38	35	36.5
4	Zone 4	1.00	Project	-3.00	30.00	-3	30	27	28.1
	Zone 4 Subtotal					-3	30	27	28.1
TOTAL						-17	113	96	100.0

Trip Distribution Report

Percent Of Trips Project

Zone	To Gates										
	2	4	6	7	8	9	10	11	12	14	15
1	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
2	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
3	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
4	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
Zone	To Gates										
	16	17	18	20	21	22	23	25	31	32	33
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0
Zone	To Gates										
	36	37	41	43	48	51	52	54	55	56	57
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	35.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	5.0	25.0
3	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0
4	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	10.0
Zone	To Gates										
	58	59									
1	0.0	0.0									
2	0.0	0.0									
3	5.0	5.0									
4	0.0	0.0									

Turning Movement Report  
AM

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
<b>#1 Golden and Kraemer</b>													
Base	24	551	90	131	940	10	8	4	13	204	14	187	2176
Added	0	6	0	0	-1	0	0	0	0	0	0	0	5
Total	24	557	90	131	939	10	8	4	13	204	14	187	2181
<b>#2 Golden and Valencia</b>													
Base	95	233	94	55	469	66	48	171	96	55	211	46	1639
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	95	233	94	55	469	66	48	171	96	55	211	46	1639
<b>#3 Imperial and Rose</b>													
Base	278	192	165	913	663	32	38	1627	333	276	1449	619	6585
Added	0	7	0	0	-1	0	0	0	0	0	0	0	6
Total	278	199	165	913	662	32	38	1627	333	276	1449	619	6591
<b>#4 Placentia and Bastanchury</b>													
Base	132	227	166	198	502	30	50	736	198	336	834	89	3498
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	132	227	166	198	502	30	50	736	198	336	834	89	3498
<b>#5 Kraemer and Bastanchury</b>													
Base	178	535	163	70	959	231	222	708	223	163	864	72	4388
Added	0	6	0	0	-1	0	0	0	0	0	0	0	5
Total	178	541	163	70	958	231	222	708	223	163	864	72	4393
<b>#6 Valencia and Bastanchury</b>													
Base	75	295	113	49	536	139	79	640	280	289	859	45	3399
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	75	295	113	49	536	139	79	640	280	289	859	45	3399
<b>#7 McCormac and Bastanchury</b>													
Base	41	30	76	45	28	17	10	747	33	31	1022	28	2108
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	41	30	76	45	28	17	10	747	33	31	1022	28	2108
<b>#8 Yorba Linda and Bradford</b>													
Base	177	55	256	103	83	27	20	898	66	291	1359	76	3411
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	177	55	256	103	83	27	20	898	66	291	1359	76	3411
<b>#9 Yorba Linda and Kraemer</b>													
Base	228	412	191	210	974	268	235	904	167	240	1202	144	5175
Added	0	6	0	0	-1	0	0	0	0	0	0	0	5
Total	228	418	191	210	973	268	235	904	167	240	1202	144	5180
<b>#10 Yorba Linda and Palm</b>													
Base	278	0	41	0	0	0	0	1013	285	78	1299	0	2994
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	278	0	41	0	0	0	0	1013	285	78	1299	0	2994

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Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#11 Yorba Linda and Valencia													
Base	50	330	64	160	364	456	261	704	31	41	831	165	3457
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	50	330	64	160	364	456	261	704	31	41	831	165	3457
#12 Yorba Linda and Rose													
Base	102	522	156	145	1052	106	111	610	72	286	738	166	4066
Added	0	7	0	0	-1	0	0	0	0	0	0	0	6
Total	102	529	156	145	1051	106	111	610	72	286	738	166	4072
#13 Kraemer and Morse													
Base	3	723	194	65	1347	16	26	54	12	277	23	132	2872
Added	0	6	0	0	-1	0	0	0	0	0	0	0	5
Total	3	729	194	65	1346	16	26	54	12	277	23	132	2877
#14 Palm and Valencia													
Base	6	39	18	239	37	62	72	428	18	25	308	146	1398
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	6	39	18	239	37	62	72	428	18	25	308	146	1398
#15 Palm and Rose													
Base	347	833	7	4	1360	58	60	2	635	15	12	9	3342
Added	0	7	0	0	-1	0	0	0	0	0	0	0	6
Total	347	840	7	4	1359	58	60	2	635	15	12	9	3348
#16 Madison and Bradford													
Base	69	291	220	86	344	91	97	123	107	295	151	70	1944
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	69	291	220	86	344	91	97	123	107	295	151	70	1944
#17 Madison and Kraemer													
Base	264	737	4	18	1447	216	121	16	326	18	101	60	3328
Added	0	6	0	0	-1	0	0	0	0	0	0	0	5
Total	264	743	4	18	1446	216	121	16	326	18	101	60	3333
#18 Buena Vista and Rose													
Base	0	918	191	163	1878	0	0	0	0	346	0	264	3760
Added	0	7	0	0	-1	0	0	0	0	0	0	0	6
Total	0	925	191	163	1877	0	0	0	0	346	0	264	3766
#19 Nutwood and Placentia													
Base	130	385	74	3	789	613	136	19	123	84	181	5	2542
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	130	385	74	3	789	613	136	19	123	84	181	5	2542
#20 Alta Vista and Kraemer													
Base	35	528	106	255	1314	220	141	225	51	170	192	358	3595
Added	0	6	0	0	-1	0	0	0	0	0	0	0	5
Total	35	534	106	255	1313	220	141	225	51	170	192	358	3600

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Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#21 Alta Vista and Rose													
Base	94	638	14	194	1548	342	298	343	258	122	302	137	4290
Added	0	7	0	0	-1	0	0	0	0	0	0	0	6
Total	94	645	14	194	1547	342	298	343	258	122	302	137	4296
#22 Alta Vista and Jefferson													
Base	107	11	46	6	57	55	24	304	233	116	321	7	1287
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	107	11	46	6	57	55	24	304	233	116	321	7	1287
#23 Chapman and Placentia													
Base	291	361	147	135	678	172	155	612	187	128	732	80	3678
Added	0	0	0	0	0	0	0	-2	0	0	11	0	9
Total	291	361	147	135	678	172	155	610	187	128	743	80	3687
#24 Chapman and Bradford													
Base	25	300	54	101	220	268	220	543	20	85	797	195	2828
Added	0	0	0	0	0	0	0	-2	0	0	11	0	9
Total	25	300	54	101	220	268	220	541	20	85	808	195	2837
#25 Chapman and Kraemer													
Base	225	385	147	67	1162	216	178	428	315	191	554	70	3938
Added	0	0	0	-1	0	0	0	-2	0	0	11	6	14
Total	225	385	147	66	1162	216	178	426	315	191	565	76	3952
#26 Crowther and Placentia													
Base	53	638	164	237	719	77	64	33	36	165	56	133	2375
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	53	638	164	237	719	77	64	33	36	165	56	133	2375
#27 Crowther and Melrose													
Base	87	367	99	28	507	68	6	170	201	102	274	16	1925
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	87	367	99	28	507	68	6	170	201	102	274	16	1925
#28 Crowther and Kraemer													
Base	62	634	3	212	1326	175	71	119	63	0	104	84	2853
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	62	634	3	212	1326	175	71	119	63	0	104	84	2853
#29 Orangethorpe and Placentia													
Base	45	422	132	162	425	251	324	826	69	123	600	236	3615
Added	0	0	0	0	0	0	0	-2	0	0	11	0	9
Total	45	422	132	162	425	251	324	824	69	123	611	236	3624
#30 Orangethorpe and SR-57 SB Ramp/Iowa Pl													
Base	3	9	36	321	0	167	150	1009	2	13	890	496	3096
Added	0	0	0	-2	0	0	0	-2	0	0	11	11	18
Total	3	9	36	319	0	167	150	1007	2	13	901	507	3114



Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#31 Orangethorpe and SR-57 NB Ramps													
Base	266	0	589	0	0	0	174	1192	0	0	1133	239	3593
Added	0	0	-2	0	0	0	0	-3	0	0	23	11	29
Total	266	0	587	0	0	0	174	1189	0	0	1156	250	3622
#32 Orangethorpe and Melrose													
Base	181	336	59	66	514	228	244	768	491	81	818	54	3840
Added	0	0	0	0	0	0	0	-5	0	0	34	0	29
Total	181	336	59	66	514	228	244	763	491	81	852	54	3869
#33 Orangethorpe and Kraemer													
Base	169	507	72	47	1152	233	161	474	335	155	438	48	3791
Added	0	0	0	0	0	0	0	-5	0	0	34	0	29
Total	169	507	72	47	1152	233	161	469	335	155	472	48	3820
#34 Orangethorpe and Miller/Crowther													
Base	28	44	34	48	266	3	1	440	162	111	492	103	1732
Added	0	0	0	0	0	0	0	-5	0	0	34	0	29
Total	28	44	34	48	266	3	1	435	162	111	526	103	1761
#35 Orangethorpe and Chapman													
Base	0	0	0	459	0	106	33	489	0	0	600	356	2043
Added	0	0	0	-3	0	0	0	-5	0	0	34	17	43
Total	0	0	0	456	0	106	33	484	0	0	634	373	2086
#36 Rose Drive and Del Cerro Dr													
Base	0	554	53	75	1810	0	0	0	0	205	0	91	2788
Added	0	0	0	-1	0	0	0	0	0	0	0	7	6
Total	0	554	53	74	1810	0	0	0	0	205	0	98	2794
#37 Orangethorpe and Del Cerro Dr													
Base	0	0	0	68	0	80	118	531	0	0	849	163	1809
Added	0	0	0	-1	0	0	0	-8	0	0	51	7	49
Total	0	0	0	67	0	80	118	523	0	0	900	170	1858
#38 Orangethorpe and Jefferson													
Base	21	58	27	80	205	196	26	550	44	39	884	61	2191
Added	17	0	6	0	0	0	0	-7	-2	-1	41	0	54
Total	38	58	33	80	205	196	26	543	42	38	925	61	2245
#39 Orangethorpe and Van Buren													
Base	23	55	25	56	272	169	40	570	47	40	792	38	2127
Added	19	2	8	0	0	0	0	1	-2	-1	22	0	49
Total	42	57	33	56	272	169	40	571	45	39	814	38	2176
#40 Orangethorpe and Richfield													
Base	11	136	45	75	626	42	60	497	97	124	809	73	2595
Added	12	1	8	0	0	0	0	9	-1	0	9	0	38
Total	23	137	53	75	626	42	60	506	96	124	818	73	2633

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#41 Van Buren and Miraloma													
Base	30	64	17	31	271	40	30	190	73	25	216	18	1005
Added	0	0	0	6	2	2	0	0	0	0	0	0	10
Total	30	64	17	37	273	42	30	190	73	25	216	18	1015
#42 Miraloma and Richfield													
Base	37	169	30	61	613	88	27	143	86	4	144	33	1435
Added	0	0	0	0	2	0	0	6	0	0	0	0	8
Total	37	169	30	61	615	88	27	149	86	4	144	33	1443
#4000 Orangethorpe and Lakeview													
Base	120	230	95	120	590	50	40	480	240	290	1340	70	3665
Added	10	1	2	0	-1	0	0	9	8	-1	-1	0	27
Total	130	231	97	120	589	50	40	489	248	289	1339	70	3692

Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 1 Golden and Kraemer	A xxxxx	0.490	A xxxxx	0.489	-0.000 V/C
# 2 Golden and Valencia	A xxxxx	0.435	A xxxxx	0.435	+ 0.000 V/C
# 3 Imperial and Rose	E xxxxx	0.921	E xxxxx	0.921	+ 0.000 V/C
# 4 Placentia and Bastanchury	C xxxxx	0.730	C xxxxx	0.730	+ 0.000 V/C
# 5 Kraemer and Bastanchury	C xxxxx	0.740	C xxxxx	0.740	-0.000 V/C
# 6 Valencia and Bastanchury	B xxxxx	0.683	B xxxxx	0.683	+ 0.000 V/C
# 7 McCormac and Bastanchury	A xxxxx	0.500	A xxxxx	0.500	+ 0.000 V/C
# 8 Yorba Linda and Bradford	B xxxxx	0.651	B xxxxx	0.651	+ 0.000 V/C
# 9 Yorba Linda and Kraemer	B xxxxx	0.691	B xxxxx	0.691	-0.000 V/C
# 10 Yorba Linda and Palm	A xxxxx	0.551	A xxxxx	0.551	+ 0.000 V/C
# 11 Yorba Linda and Valencia	C xxxxx	0.782	C xxxxx	0.782	+ 0.000 V/C
# 12 Yorba Linda and Rose	D xxxxx	0.805	D xxxxx	0.804	-0.000 V/C
# 13 Kraemer and Morse	B xxxxx	0.690	B xxxxx	0.690	-0.000 V/C
# 14 Palm and Valencia	C 16.1	0.565	C 16.1	0.565	+ 0.000 V/C
# 15 Palm and Rose	D xxxxx	0.874	D xxxxx	0.873	-0.000 V/C
# 16 Madison and Bradford	A xxxxx	0.565	A xxxxx	0.565	+ 0.000 V/C
# 17 Madison and Kraemer	D xxxxx	0.874	D xxxxx	0.874	-0.000 V/C
# 18 Buena Vista and Rose	D xxxxx	0.846	D xxxxx	0.845	-0.000 V/C
# 19 Nutwood and Placentia	C xxxxx	0.756	C xxxxx	0.756	+ 0.000 V/C
# 20 Alta Vista and Kraemer	C xxxxx	0.787	C xxxxx	0.787	-0.000 V/C
# 21 Alta Vista and Rose	C xxxxx	0.719	C xxxxx	0.719	-0.000 V/C
# 22 Alta Vista and Jefferson	A xxxxx	0.389	A xxxxx	0.389	+ 0.000 V/C
# 23 Chapman and Placentia	B xxxxx	0.678	B xxxxx	0.681	+ 0.003 V/C
# 24 Chapman and Bradford	B xxxxx	0.675	B xxxxx	0.678	+ 0.003 V/C
# 25 Chapman and Kraemer	C xxxxx	0.787	C xxxxx	0.787	+ 0.000 V/C

## Intersection

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 26 Crowther and Placentia	A xxxxx	0.590	A xxxxx	0.590	+ 0.000 V/C
# 27 Crowther and Melrose	A xxxxx	0.470	A xxxxx	0.470	+ 0.000 V/C
# 28 Crowther and Kraemer	B xxxxx	0.607	B xxxxx	0.607	+ 0.000 V/C
# 29 Orangethorpe and Placentia	B xxxxx	0.634	B xxxxx	0.634	+ 0.000 V/C
# 30 Orangethorpe and SR-57 SB Ramp	A xxxxx	0.577	A xxxxx	0.583	+ 0.006 V/C
# 31 Orangethorpe and SR-57 NB Ramp	C xxxxx	0.752	C xxxxx	0.758	+ 0.006 V/C
# 32 Orangethorpe and Melrose	C xxxxx	0.721	C xxxxx	0.721	+ 0.000 V/C
# 33 Orangethorpe and Kraemer	D xxxxx	0.815	D xxxxx	0.815	+ 0.000 V/C
# 34 Orangethorpe and Miller/Crowth	A xxxxx	0.435	A xxxxx	0.434	-0.001 V/C
# 35 Orangethorpe and Chapman	A xxxxx	0.433	A xxxxx	0.443	+ 0.010 V/C
# 36 Rose Drive and Del Cerro Dr	B xxxxx	0.674	B xxxxx	0.674	+ 0.000 V/C
# 37 Orangethorpe and Del Cerro Dr	A xxxxx	0.323	A xxxxx	0.334	+ 0.011 V/C
# 38 Orangethorpe and Jefferson	A xxxxx	0.480	A xxxxx	0.503	+ 0.023 V/C
# 39 Orangethorpe and Van Buren	A xxxxx	0.503	A xxxxx	0.521	+ 0.019 V/C
# 40 Orangethorpe and Richfield	A xxxxx	0.551	A xxxxx	0.561	+ 0.010 V/C
# 41 Van Buren and Miraloma	B 11.0	0.312	B 11.1	0.322	+ 0.010 V/C
# 42 Miraloma and Richfield	A xxxxx	0.361	A xxxxx	0.362	+ 0.001 V/C

Level Of Service Computation Report

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

Intersection #1 Golden and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.489
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #2 Golden and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.435
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Table with 12 columns representing traffic volumes. Rows include 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 Final Volume.

Table with 12 columns representing saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing capacity analysis. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.921
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.

Level Of Service Computation Report

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

Intersection #4 Placentia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 41 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.

Level Of Service Computation Report

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

Intersection #5 Kraemer and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows of metrics 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 Final Volume.

Saturation Flow Module:

Table with 12 columns representing saturation flow and 4 rows of metrics including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis and 3 rows of metrics including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #6 Valencia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows of metrics 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 Final Volume.

Saturation Flow Module:

Table with 12 columns representing saturation flow and 4 rows of metrics including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis and 3 rows of metrics including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #7 McCormac and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.500
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #8 Yorba Linda and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.651
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #9 Yorba Linda and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #10 Yorba Linda and Palm

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #11 Yorba Linda and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #12 Yorba Linda and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.804
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 53 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.



Level Of Service Computation Report

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

Intersection #13 Kraemer and Morse

Cycle (sec): 100 Critical Vol./Cap.(X): 0.690
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic flows. Rows include 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 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 Palm and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.565
Loss Time (sec): 5 Average Delay (sec/veh): 16.1
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Lanes.

Volume Module:

Table with 12 columns representing traffic flows. Rows include 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 12 columns. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

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

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.873
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 74 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 4 rows for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #16 Madison and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.565
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 4 rows for Vol/Sat, Crit Moves, and other metrics.

Level Of Service Computation Report

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

Intersection #17 Madison and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 74 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing different traffic volumes and 10 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 10 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 10 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #18 Buena Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.845
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing different traffic volumes and 10 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 10 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 10 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #19 Nutwood and Placentia

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and metrics. Rows include 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 Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #20 Alta Vista and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and metrics. Rows include 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 Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics. Rows include Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #21 Alta Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.

Level Of Service Computation Report

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

Intersection #22 Alta Vista and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.389
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows of volume data.

Saturation Flow Module table with 12 columns and 4 rows of saturation flow data.

Capacity Analysis Module table with 12 columns and 3 rows of capacity analysis data.

Level Of Service Computation Report

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

Intersection #23 Chapman and Placentia

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 11 columns representing different traffic volumes and metrics. Rows include 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module:

Table with 11 columns representing saturation flow metrics. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 11 columns representing capacity analysis metrics. Rows include Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #24 Chapman and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.678
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 11 columns representing different traffic volumes and metrics. Rows include 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module:

Table with 11 columns representing saturation flow metrics. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 11 columns representing capacity analysis metrics. Rows include Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #26 Crowther and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.590
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #27 Crowther and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.470
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #28 Crowther and Kraemer

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.



Level Of Service Computation Report

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

Intersection #29 Orangethorpe and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows for Vol/Sat, Crit Moves, and summary statistics.

Level Of Service Computation Report

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

Intersection #30 Orangethorpe and SR-57 SB Ramp/Iowa Pl

Cycle (sec): 100 Critical Vol./Cap.(X): 0.583
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows for Vol/Sat, Crit Moves, and summary statistics.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.758
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #33 Orangethorpe and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 55 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #34 Orangethorpe and Miller/Crowther

Cycle (sec): 100 Critical Vol./Cap.(X): 0.434
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #35 Orangethorpe and Chapman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.443
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with columns: Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North, South, East, West bounds.

Volume Module:

Table with columns: 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, FinalVolume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #36 Rose Drive and Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.674
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 52 Level Of Service: B

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Rose Drive and Del Cerro Dr.

Volume Module:

Table with columns: 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, FinalVolume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #37 Orangethorpe and Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.334
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with columns for Street Name (Del Cerro Dr, Orangethorpe), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Protected), Rights (Include), and various traffic volume metrics.

Table for Volume Module showing 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 Final Volume across different approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. values for each approach.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves for each approach.

Level Of Service Computation Report

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

Intersection #38 Orangethorpe and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.503
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Protected), Rights (Include), and various traffic volume metrics.

Table for Volume Module showing 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 Final Volume across different approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. values for each approach.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves for each approach.

Level Of Service Computation Report

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

Intersection #39 Orangethorpe and Van Buren

Cycle (sec): 100 Critical Vol./Cap.(X): 0.521
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves.

Level Of Service Computation Report

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

Intersection #40 Orangethorpe and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.561
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves.

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #41 Van Buren and Miraloma

Cycle (sec): 100 Critical Vol./Cap.(X): 0.322
Loss Time (sec): 5 Average Delay (sec/veh): 11.1
Optimal Cycle: 0 Level of Service: B

Table with columns for Street Name (Van Buren, Miraloma), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Table for Volume Module showing 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 for various approaches.

Table for Saturation Flow Module showing Adjustment, Lanes, and Final Sat. values for different movements.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #42 Miraloma and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.362
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level of Service: A

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted), Rights (Include), Min. Green, Y+R, and Lanes.

Table for Volume Module showing 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 for various approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. values for different movements.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, and other capacity-related metrics.

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Scenario Report

Scenario: Proposed GP PM

Command: Proposed GP PM  
 Volume: 2040 Base PM  
 Geometry: Existing  
 Impact Fee: Default Impact Fee  
 Trip Generation: PM  
 Trip Distribution: Project  
 Paths: Default Path  
 Routes: Default Route  
 Configuration: Default Configuration

Trip Generation Report

Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Zone 1	1.00	Project	21.00	-1.00	21	-1	20	14.7
	Zone 1 Subtotal					21	-1	20	14.7
2	Zone 2	1.00	Project	24.00	7.00	24	7	31	22.8
	Zone 2 Subtotal					24	7	31	22.8
3	Zone 3	1.00	Project	38.00	10.00	38	10	48	35.3
	Zone 3 Subtotal					38	10	48	35.3
4	Zone 4	1.00	Project	30.00	7.00	30	7	37	27.2
	Zone 4 Subtotal					30	7	37	27.2
TOTAL						113	23	136	100.0

Trip Distribution Report

Percent Of Trips Project

Zone	To Gates										
	2	4	6	7	8	9	10	11	12	14	15
1	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
2	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
3	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
4	10.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0
Zone	To Gates										
	16	17	18	20	21	22	23	25	31	32	33
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0
Zone	To Gates										
	36	37	41	43	48	51	52	54	55	56	57
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	35.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	5.0	25.0
3	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0
4	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	10.0
Zone	To Gates										
	58	59									
1	0.0	0.0									
2	0.0	0.0									
3	5.0	5.0									
4	0.0	0.0									

Turning Movement Report  
PM

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
<b>#1 Golden and Kraemer</b>													
Base	42	746	121	128	1072	20	25	14	44	97	14	105	2428
Added	0	1	0	0	6	0	0	0	0	0	0	0	7
Total	42	747	121	128	1078	20	25	14	44	97	14	105	2435
<b>#2 Golden and Valencia</b>													
Base	51	355	48	44	390	42	46	73	66	34	86	54	1289
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	51	355	48	44	390	42	46	73	66	34	86	54	1289
<b>#3 Imperial and Rose</b>													
Base	322	615	121	806	410	50	69	1574	267	163	1447	769	6613
Added	0	2	0	0	7	0	0	0	0	0	0	0	9
Total	322	617	121	806	417	50	69	1574	267	163	1447	769	6622
<b>#4 Placentia and Bastanchury</b>													
Base	233	376	314	193	423	63	51	959	163	292	963	134	4164
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	233	376	314	193	423	63	51	959	163	292	963	134	4164
<b>#5 Kraemer and Bastanchury</b>													
Base	296	756	91	68	721	321	212	1032	247	95	860	94	4793
Added	0	1	0	0	6	0	0	0	0	0	0	0	7
Total	296	757	91	68	727	321	212	1032	247	95	860	94	4800
<b>#6 Valencia and Bastanchury</b>													
Base	116	343	136	52	327	112	99	883	187	118	773	48	3194
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	116	343	136	52	327	112	99	883	187	118	773	48	3194
<b>#7 McCormac and Bastanchury</b>													
Base	38	16	45	18	11	6	6	973	45	46	902	22	2128
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	38	16	45	18	11	6	6	973	45	46	902	22	2128
<b>#8 Yorba Linda and Bradford</b>													
Base	211	137	281	121	96	28	77	1497	145	254	1248	110	4205
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	211	137	281	121	96	28	77	1497	145	254	1248	110	4205
<b>#9 Yorba Linda and Kraemer</b>													
Base	276	788	224	182	628	235	247	1338	189	186	1158	164	5615
Added	0	1	0	0	6	0	0	0	0	0	0	0	7
Total	276	789	224	182	634	235	247	1338	189	186	1158	164	5622
<b>#10 Yorba Linda and Palm</b>													
Base	336	0	50	0	0	0	0	1309	401	46	1185	0	3327
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	336	0	50	0	0	0	0	1309	401	46	1185	0	3327

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#11 Yorba Linda and Valencia													
Base	40	222	47	138	322	266	250	1040	44	38	866	127	3400
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	40	222	47	138	322	266	250	1040	44	38	866	127	3400
#12 Yorba Linda and Rose													
Base	178	938	207	165	586	108	131	908	76	224	715	174	4410
Added	0	2	0	0	7	0	0	0	0	0	0	0	9
Total	178	940	207	165	593	108	131	908	76	224	715	174	4419
#13 Kraemer and Morse													
Base	8	1277	151	75	915	26	16	16	6	118	12	78	2698
Added	0	1	0	0	6	0	0	0	0	0	0	0	7
Total	8	1278	151	75	921	26	16	16	6	118	12	78	2705
#14 Palm and Valencia													
Base	5	39	18	238	37	56	77	416	18	25	308	146	1383
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	39	18	238	37	56	77	416	18	25	308	146	1383
#15 Palm and Rose													
Base	452	1226	11	8	926	82	61	4	563	5	5	8	3351
Added	0	2	0	0	7	0	0	0	0	0	0	0	9
Total	452	1228	11	8	933	82	61	4	563	5	5	8	3360
#16 Madison and Bradford													
Base	99	376	162	92	358	106	105	158	102	113	203	102	1976
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	99	376	162	92	358	106	105	158	102	113	203	102	1976
#17 Madison and Kraemer													
Base	249	1309	7	35	862	119	156	30	228	4	16	16	3031
Added	0	1	0	0	6	0	0	0	0	0	0	0	7
Total	249	1310	7	35	868	119	156	30	228	4	16	16	3038
#18 Buena Vista and Rose													
Base	0	1446	295	181	1282	0	0	0	0	198	0	237	3639
Added	0	2	0	0	7	0	0	0	0	0	0	0	9
Total	0	1448	295	181	1289	0	0	0	0	198	0	237	3648
#19 Nutwood and Placentia													
Base	128	715	19	13	520	361	618	41	290	33	56	12	2806
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	128	715	19	13	520	361	618	41	290	33	56	12	2806
#20 Alta Vista and Kraemer													
Base	15	1149	220	301	677	101	70	62	13	169	90	331	3198
Added	0	1	0	0	6	0	0	0	0	0	0	0	7
Total	15	1150	220	301	683	101	70	62	13	169	90	331	3205

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#21 Alta Vista and Rose													
Base	211	1285	53	128	914	242	301	248	106	102	281	115	3986
Added	0	2	0	0	7	0	0	0	0	0	0	0	9
Total	211	1287	53	128	921	242	301	248	106	102	281	115	3995
#22 Alta Vista and Jefferson													
Base	163	67	110	4	18	42	66	335	83	24	212	23	1147
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	163	67	110	4	18	42	66	335	83	24	212	23	1147
#23 Chapman and Placentia													
Base	286	455	169	229	397	193	280	959	211	157	947	172	4455
Added	0	0	0	0	0	0	0	11	0	0	2	0	13
Total	286	455	169	229	397	193	280	970	211	157	949	172	4468
#24 Chapman and Bradford													
Base	42	187	73	105	151	309	308	845	61	58	832	182	3153
Added	0	0	0	0	0	0	0	11	0	0	2	0	13
Total	42	187	73	105	151	309	308	856	61	58	834	182	3166
#25 Chapman and Kraemer													
Base	349	1019	145	83	536	205	212	457	174	76	519	76	3851
Added	0	0	0	6	0	0	0	11	0	0	2	1	20
Total	349	1019	145	89	536	205	212	468	174	76	521	77	3871
#26 Crowther and Placentia													
Base	73	652	165	104	525	103	136	82	78	241	95	211	2465
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	73	652	165	104	525	103	136	82	78	241	95	211	2465
#27 Crowther and Melrose													
Base	228	369	49	9	232	36	33	274	145	64	250	57	1746
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	228	369	49	9	232	36	33	274	145	64	250	57	1746
#28 Crowther and Kraemer													
Base	78	1223	1	69	658	80	87	114	42	0	164	206	2722
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	78	1223	1	69	658	80	87	114	42	0	164	206	2722
#29 Orangethorpe and Placentia													
Base	62	389	115	273	448	329	209	762	69	189	966	203	4014
Added	0	0	0	0	0	0	0	11	0	0	2	0	13
Total	62	389	115	273	448	329	209	773	69	189	968	203	4027
#30 Orangethorpe and SR-57 SB Ramp/Iowa Pl													
Base	5	5	12	179	2	241	280	970	3	14	1057	426	3194
Added	0	0	0	11	0	0	0	11	0	0	2	2	26
Total	5	5	12	190	2	241	280	981	3	14	1059	428	3220

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#31 Orangethorpe and SR-57 NB Ramps													
Base	194	0	733	0	0	0	214	947	0	0	1256	491	3835
Added	0	0	11	0	0	0	0	23	0	0	5	2	41
Total	194	0	744	0	0	0	214	970	0	0	1261	493	3876
#32 Orangethorpe and Melrose													
Base	535	446	76	74	240	258	108	1048	226	51	829	65	3956
Added	0	0	0	0	0	0	0	34	0	0	7	0	41
Total	535	446	76	74	240	258	108	1082	226	51	836	65	3997
#33 Orangethorpe and Kraemer													
Base	328	1036	145	31	508	163	255	728	220	88	458	40	4000
Added	0	0	0	0	0	0	0	34	0	0	7	0	41
Total	328	1036	145	31	508	163	255	762	220	88	465	40	4041
#34 Orangethorpe and Miller/Crowther													
Base	154	262	158	82	84	1	3	727	67	48	378	94	2058
Added	0	0	0	0	0	0	0	34	0	0	7	0	41
Total	154	262	158	82	84	1	3	761	67	48	385	94	2099
#35 Orangethorpe and Chapman													
Base	0	0	0	362	0	32	69	898	0	0	488	552	2401
Added	0	0	0	17	0	0	0	34	0	0	7	3	61
Total	0	0	0	379	0	32	69	932	0	0	495	555	2462
#36 Rose Drive and Del Cerro Dr													
Base	0	1460	169	61	1074	0	0	0	0	86	0	171	3021
Added	0	0	0	7	0	0	0	0	0	0	0	2	9
Total	0	1460	169	68	1074	0	0	0	0	86	0	173	3030
#37 Orangethorpe and Del Cerro Dr													
Base	0	0	0	90	0	146	156	992	0	0	559	104	2047
Added	0	0	0	7	0	0	0	51	0	0	10	2	70
Total	0	0	0	97	0	146	156	1043	0	0	569	106	2117
#38 Orangethorpe and Jefferson													
Base	47	258	83	45	63	57	97	1035	40	22	713	51	2511
Added	4	0	1	0	0	0	0	41	17	6	8	0	77
Total	51	258	84	45	63	57	97	1076	57	28	721	51	2588
#39 Orangethorpe and Van Buren													
Base	50	172	71	50	91	62	140	983	40	24	674	57	2414
Added	5	1	2	0	2	0	0	24	19	8	9	0	70
Total	55	173	73	50	93	62	140	1007	59	32	683	57	2484
#40 Orangethorpe and Richfield													
Base	55	472	93	77	230	82	189	905	52	57	601	112	2925
Added	4	0	2	0	1	0	0	14	12	8	13	0	54
Total	59	472	95	77	231	82	189	919	64	65	614	112	2979

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#41 Van Buren and Miraloma													
Base	48	169	13	11	144	42	90	226	31	30	274	27	1105
Added	0	2	0	2	1	1	2	0	0	0	0	6	14
Total	48	171	13	13	145	43	92	226	31	30	274	33	1119
#42 Miraloma and Richfield													
Base	78	441	17	31	314	39	62	178	68	32	183	51	1494
Added	0	2	0	0	1	0	0	2	0	0	6	0	11
Total	78	443	17	31	315	39	62	180	68	32	189	51	1505
#4000 Orangethorpe and Lakeview													
Base	180	650	320	70	270	50	180	1110	90	130	590	80	3720
Added	12	0	0	0	1	0	0	2	14	2	9	0	40
Total	192	650	320	70	271	50	180	1112	104	132	599	80	3760

Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 1 Golden and Kraemer	A xxxxx	0.488	A xxxxx	0.490	+ 0.002 V/C
# 2 Golden and Valencia	A xxxxx	0.297	A xxxxx	0.297	+ 0.000 V/C
# 3 Imperial and Rose	E xxxxx	0.999	E xxxxx	1.000	+ 0.001 V/C
# 4 Placentia and Bastanchury	D xxxxx	0.861	D xxxxx	0.861	+ 0.000 V/C
# 5 Kraemer and Bastanchury	D xxxxx	0.812	D xxxxx	0.813	+ 0.001 V/C
# 6 Valencia and Bastanchury	B xxxxx	0.604	B xxxxx	0.604	+ 0.000 V/C
# 7 McCormac and Bastanchury	A xxxxx	0.466	A xxxxx	0.466	+ 0.000 V/C
# 8 Yorba Linda and Bradford	C xxxxx	0.795	C xxxxx	0.795	+ 0.000 V/C
# 9 Yorba Linda and Kraemer	D xxxxx	0.837	D xxxxx	0.837	+ 0.000 V/C
# 10 Yorba Linda and Palm	A xxxxx	0.551	A xxxxx	0.551	+ 0.000 V/C
# 11 Yorba Linda and Valencia	B xxxxx	0.680	B xxxxx	0.680	+ 0.000 V/C
# 12 Yorba Linda and Rose	D xxxxx	0.862	D xxxxx	0.863	+ 0.001 V/C
# 13 Kraemer and Morse	A xxxxx	0.585	A xxxxx	0.585	+ 0.000 V/C
# 14 Palm and Valencia	C 15.8	0.560	C 15.8	0.560	+ 0.000 V/C
# 15 Palm and Rose	B xxxxx	0.688	B xxxxx	0.691	+ 0.002 V/C
# 16 Madison and Bradford	A xxxxx	0.530	A xxxxx	0.530	+ 0.000 V/C
# 17 Madison and Kraemer	B xxxxx	0.621	B xxxxx	0.621	+ 0.000 V/C
# 18 Buena Vista and Rose	C xxxxx	0.757	C xxxxx	0.757	+ 0.001 V/C
# 19 Nutwood and Placentia	B xxxxx	0.648	B xxxxx	0.648	+ 0.000 V/C
# 20 Alta Vista and Kraemer	D xxxxx	0.840	D xxxxx	0.841	+ 0.000 V/C
# 21 Alta Vista and Rose	B xxxxx	0.675	B xxxxx	0.675	+ 0.000 V/C
# 22 Alta Vista and Jefferson	A xxxxx	0.321	A xxxxx	0.321	+ 0.000 V/C
# 23 Chapman and Placentia	C xxxxx	0.779	C xxxxx	0.783	+ 0.003 V/C
# 24 Chapman and Bradford	C xxxxx	0.772	C xxxxx	0.773	+ 0.001 V/C
# 25 Chapman and Kraemer	C xxxxx	0.711	C xxxxx	0.712	+ 0.001 V/C

## Intersection

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 26 Crowther and Placentia	B xxxxx	0.616	B xxxxx	0.616	+ 0.000 V/C
# 27 Crowther and Melrose	A xxxxx	0.483	A xxxxx	0.483	+ 0.000 V/C
# 28 Crowther and Kraemer	A xxxxx	0.527	A xxxxx	0.527	+ 0.000 V/C
# 29 Orangethorpe and Placentia	B xxxxx	0.658	B xxxxx	0.658	+ 0.000 V/C
# 30 Orangethorpe and SR-57 SB Ramp	A xxxxx	0.558	A xxxxx	0.560	+ 0.001 V/C
# 31 Orangethorpe and SR-57 NB Ramp	E xxxxx	0.931	E xxxxx	0.939	+ 0.008 V/C
# 32 Orangethorpe and Melrose	D xxxxx	0.820	D xxxxx	0.827	+ 0.007 V/C
# 33 Orangethorpe and Kraemer	B xxxxx	0.690	C xxxxx	0.701	+ 0.011 V/C
# 34 Orangethorpe and Miller/Crowth	A xxxxx	0.458	A xxxxx	0.465	+ 0.007 V/C
# 35 Orangethorpe and Chapman	A xxxxx	0.547	A xxxxx	0.554	+ 0.007 V/C
# 36 Rose Drive and Del Cerro Dr	A xxxxx	0.477	A xxxxx	0.482	+ 0.005 V/C
# 37 Orangethorpe and Del Cerro Dr	A xxxxx	0.297	A xxxxx	0.312	+ 0.014 V/C
# 38 Orangethorpe and Jefferson	A xxxxx	0.530	A xxxxx	0.552	+ 0.022 V/C
# 39 Orangethorpe and Van Buren	A xxxxx	0.519	A xxxxx	0.538	+ 0.019 V/C
# 40 Orangethorpe and Richfield	A xxxxx	0.588	A xxxxx	0.598	+ 0.010 V/C
# 41 Van Buren and Miraloma	B 11.4	0.295	B 11.5	0.301	+ 0.007 V/C
# 42 Miraloma and Richfield	A xxxxx	0.318	A xxxxx	0.321	+ 0.002 V/C

Level Of Service Computation Report

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

Intersection #1 Golden and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.490
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report

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

Intersection #2 Golden and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.297
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, and other capacity metrics.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 1.000
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #4 Placentia and Bastanchury

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

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #5 Kraemer and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.813
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 55 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing different traffic metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow metrics and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics and 3 rows of data including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #6 Valencia and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.604
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing different traffic metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow metrics and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics and 3 rows of data including Vol/Sat, Crit Moves, and asterisks.



Level Of Service Computation Report

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

Intersection #7 McCormac and Bastanchury

Cycle (sec): 100 Critical Vol./Cap.(X): 0.466
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #8 Yorba Linda and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.795
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 51 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 15 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #9 Yorba Linda and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.837
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #10 Yorba Linda and Palm

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #11 Yorba Linda and Valencia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.680
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #12 Yorba Linda and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.863
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 70 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

\*\*\*\*\*
Intersection #13 Kraemer and Morse
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing traffic flows and 12 rows of metrics including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns and 3 rows showing Vol/Sat, Crit Moves, and Delay/Veh.

\*\*\*\*\*

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #14 Palm and Valencia
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.560
Loss Time (sec): 5 Average Delay (sec/veh): 15.8
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Lanes.

Volume Module table with 12 columns and 12 rows of metrics including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns and 3 rows showing Vol/Sat, Crit Moves, and Delay/Veh.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Level Of Service Computation Report

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

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #16 Madison and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.530
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #17 Madison and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #18 Buena Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.757
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #19 Nutwood and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #20 Alta Vista and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.841
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 62 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #21 Alta Vista and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #22 Alta Vista and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.321
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, Crit Moves, and asterisks.



Level Of Service Computation Report

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

Intersection #23 Chapman and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.783
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #24 Chapman and Bradford

Cycle (sec): 100 Critical Vol./Cap.(X): 0.773
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 3 rows for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.712
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #26 Crowther and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.616
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #27 Crowther and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.483
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #28 Crowther and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.527
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #29 Orangethorpe and Placentia

Cycle (sec): 100 Critical Vol./Cap.(X): 0.658
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #30 Orangethorpe and SR-57 SB Ramp/Iowa Pl

Cycle (sec): 100 Critical Vol./Cap.(X): 0.560
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.939
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 117 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 10 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.827
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 58 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 10 rows of metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #33 Orangethorpe and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.701
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 37 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing different volume metrics and 10 rows of data.

Saturation Flow Module:

Table with 10 columns representing saturation flow metrics and 4 rows of data.

Capacity Analysis Module:

Table with 10 columns representing capacity analysis metrics and 2 rows of data.

Level Of Service Computation Report

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

Intersection #34 Orangethorpe and Miller/Crowther

Cycle (sec): 100 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 10 columns representing different volume metrics and 10 rows of data.

Saturation Flow Module:

Table with 10 columns representing saturation flow metrics and 4 rows of data.

Capacity Analysis Module:

Table with 10 columns representing capacity analysis metrics and 2 rows of data.

Level Of Service Computation Report

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

Intersection #35 Orangethorpe and Chapman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.554
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with columns: Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North, South, East, West bounds.

Volume Module:

Table with columns: 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, FinalVolume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #36 Rose Drive and Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.482
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Rose Drive and Del Cerro Dr.

Volume Module:

Table with columns: 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, FinalVolume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #37 Orangethorpe and Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.312
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with columns for Street Name (Del Cerro Dr, Orangethorpe), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted, Protected), Rights (Include), and various traffic volume metrics.

Table for Volume Module showing 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 Final Volume across different approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. values for each approach.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves for each approach.

Level Of Service Computation Report

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

Intersection #38 Orangethorpe and Jefferson

Cycle (sec): 100 Critical Vol./Cap.(X): 0.552
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include), and various traffic volume metrics.

Table for Volume Module showing 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 Final Volume across different approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. values for each approach.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves for each approach.



Level Of Service Computation Report

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

Intersection #39 Orangethorpe and Van Buren

Cycle (sec): 100 Critical Vol./Cap.(X): 0.538
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat and Crit Moves.

Level Of Service Computation Report

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

Intersection #40 Orangethorpe and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.598
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat and Crit Moves.

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #41 Van Buren and Miraloma

Cycle (sec): 100 Critical Vol./Cap.(X): 0.301
Loss Time (sec): 5 Average Delay (sec/veh): 11.5
Optimal Cycle: 0 Level of Service: B

Table with columns for Street Name (Van Buren, Miraloma), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Table for Volume Module showing 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 for various approaches.

Table for Saturation Flow Module showing Adjustment, Lanes, and Final Sat. values.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #42 Miraloma and Richfield

Cycle (sec): 100 Critical Vol./Cap.(X): 0.321
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level of Service: A

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), Min. Green, Y+R, and Lanes.

Table for Volume Module showing 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 for various approaches.
























Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, and other metrics.

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HCM 2010 Signalized Intersection Summary  
1: Kraemer & Golden

2040 Proposed GP AM  
07/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	4	13	204	14	187	24	557	90	131	939	10
Future Volume (veh/h)	8	4	13	204	14	187	24	557	90	131	939	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	8	4	14	215	15	197	25	586	95	138	988	11
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	163	427	577	523	444	453	2165	969	598	2165	930
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	803	579	1520	1389	1863	1583	562	3539	1583	756	3539	1520
Grp Volume(v), veh/h	12	0	14	215	15	197	25	586	95	138	988	11
Grp Sat Flow(s),veh/h/ln	1382	0	1520	1389	1863	1583	562	1770	1583	756	1770	1520
Q Serve(g_s), s	0.0	0.0	0.2	4.9	0.2	3.8	0.9	2.9	0.9	3.9	5.6	0.1
Cycle Q Clear(g_c), s	0.2	0.0	0.2	5.1	0.2	3.8	6.5	2.9	0.9	6.7	5.6	0.1
Prop In Lane	0.67		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	549	0	427	577	523	444	453	2165	969	598	2165	930
V/C Ratio(X)	0.02	0.00	0.03	0.37	0.03	0.44	0.06	0.27	0.10	0.23	0.46	0.01
Avail Cap(c_a), veh/h	1142	0	1103	1195	1352	1149	547	2760	1235	725	2760	1185
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	9.7	11.5	9.7	11.0	5.6	3.4	3.0	4.9	3.9	2.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.7	0.1	0.1	0.0	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	1.9	0.1	1.7	0.1	1.4	0.4	0.8	2.7	0.0
LnGrp Delay(d),s/veh	9.7	0.0	9.7	11.9	9.7	11.7	5.7	3.4	3.0	5.1	4.0	2.8
LnGrp LOS	A		A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		26			427			706			1137	
Approach Delay, s/veh		9.7			11.7			3.5			4.2	
Approach LOS		A			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		24.8		12.4		24.8		12.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		8.5		2.2		8.7		7.1				
Green Ext Time (p_c), s		12.1		1.5		12.0		1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			5.4									
HCM 2010 LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	171	96	55	211	46	95	233	94	55	469	66
Future Volume (veh/h)	48	171	96	55	211	46	95	233	94	55	469	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	51	180	101	58	222	48	100	245	99	58	494	69
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	532	664	564	549	664	564	590	1275	501	708	1603	223
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1105	1863	1583	1094	1863	1583	844	2484	976	1032	3122	434
Grp Volume(v), veh/h	51	180	101	58	222	48	100	173	171	58	279	284
Grp Sat Flow(s),veh/h/ln	1105	1863	1583	1094	1863	1583	844	1770	1690	1032	1770	1786
Q Serve(g_s), s	1.1	2.1	1.3	1.2	2.7	0.6	2.4	1.6	1.7	1.0	2.8	2.8
Cycle Q Clear(g_c), s	3.8	2.1	1.3	3.3	2.7	0.6	5.2	1.6	1.7	2.7	2.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.58	1.00		0.24
Lane Grp Cap(c), veh/h	532	664	564	549	664	564	590	909	868	708	909	917
V/C Ratio(X)	0.10	0.27	0.18	0.11	0.33	0.09	0.17	0.19	0.20	0.08	0.31	0.31
Avail Cap(c_a), veh/h	1110	1638	1393	1121	1638	1393	954	1672	1597	1153	1672	1687
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	7.0	6.8	8.2	7.2	6.6	5.8	4.0	4.0	4.8	4.3	4.3
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	0.6	0.4	1.4	0.3	0.6	0.8	0.8	0.3	1.4	1.4
LnGrp Delay(d),s/veh	8.7	7.3	6.9	8.3	7.5	6.6	6.0	4.1	4.2	4.8	4.5	4.5
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		332			328			444			621	
Approach Delay, s/veh		7.4			7.5			4.6			4.5	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.8		12.9		17.8		12.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		7.2		5.8		4.8		5.3				
Green Ext Time (p_c), s		6.6		3.2		6.8		3.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				5.7								
HCM 2010 LOS				A								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑↑		↔ ↑↑↑	↔ ↑↑↑	↔ ↑↑↑		↔ ↑↑↑		
Traffic Volume (veh/h)	38	1627	333	276	1449	619	278	199	165	913	662	32
Future Volume (veh/h)	38	1627	333	276	1449	619	278	199	165	913	662	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	40	1713	351	291	1525	652	293	209	174	961	697	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	1618	328	328	2174	677	365	765	342	766	1177	0
Arrive On Green	0.05	0.38	0.38	0.10	0.43	0.43	0.11	0.22	0.22	0.22	0.33	0.00
Sat Flow, veh/h	1774	4242	859	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	40	1365	699	291	1525	652	293	209	174	961	697	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1711	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	2.1	36.0	36.0	7.9	23.1	37.8	7.9	4.6	9.1	21.0	15.4	0.0
Cycle Q Clear(g_c), s	2.1	36.0	36.0	7.9	23.1	37.8	7.9	4.6	9.1	21.0	15.4	0.0
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	87	1293	653	328	2174	677	365	765	342	766	1177	0
V/C Ratio(X)	0.46	1.06	1.07	0.89	0.70	0.96	0.80	0.27	0.51	1.26	0.59	0.00
Avail Cap(c_a), veh/h	150	1293	653	328	2174	677	365	1350	604	766	1762	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.6	29.2	29.2	42.2	22.1	26.3	41.2	30.8	32.6	36.7	26.2	0.0
Incr Delay (d2), s/veh	3.7	41.2	55.7	24.0	1.0	25.7	12.3	0.2	1.2	125.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	24.1	27.0	4.9	10.9	21.3	4.4	2.3	4.1	23.2	7.6	0.0
LnGrp Delay(d),s/veh	47.3	70.4	84.9	66.2	23.1	52.0	53.5	31.0	33.8	162.1	26.7	0.0
LnGrp LOS	D	F	F	E	C	D	D	C	C	F	C	
Approach Vol, veh/h		2104			2468			676			1658	
Approach Delay, s/veh		74.8			35.8			41.5			105.2	
Approach LOS		E			D			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	38.0	12.0	33.4	6.6	42.4	23.0	22.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	34.0	8.0	45.0	6.0	35.0	19.0	34.0					
Max Q Clear Time (g_c+19), s	38.0	9.9	17.4	4.1	39.8	23.0	11.1					
Green Ext Time (p_c), s	0.0	0.0	0.0	7.7	0.0	0.0	0.0	7.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				64.9								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary  
 4: Placentia & Bastanchury

2040 Proposed GP AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	736	198	336	834	89	132	227	166	198	502	30
Future Volume (veh/h)	50	736	198	336	834	89	132	227	166	198	502	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	775	208	354	878	94	139	239	175	208	528	32
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	1254	561	310	1637	732	371	532	374	417	908	55
Arrive On Green	0.07	0.35	0.35	0.17	0.46	0.46	0.09	0.27	0.27	0.09	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1987	1398	1774	3391	205
Grp Volume(v), veh/h	53	775	208	354	878	94	139	212	202	208	275	285
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1616	1774	1770	1827
Q Serve(g_s), s	2.0	12.5	6.7	12.0	12.2	2.3	3.8	6.8	7.2	5.9	9.3	9.3
Cycle Q Clear(g_c), s	2.0	12.5	6.7	12.0	12.2	2.3	3.8	6.8	7.2	5.9	9.3	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.11
Lane Grp Cap(c), veh/h	117	1254	561	310	1637	732	371	474	433	417	474	489
V/C Ratio(X)	0.45	0.62	0.37	1.14	0.54	0.13	0.37	0.45	0.47	0.50	0.58	0.58
Avail Cap(c_a), veh/h	155	1389	622	310	1698	760	371	695	634	417	695	717
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	18.4	16.5	28.4	13.2	10.6	16.3	20.9	21.1	16.7	21.8	21.8
Incr Delay (d2), s/veh	2.7	0.7	0.4	95.9	0.3	0.1	0.6	0.7	0.8	0.9	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.2	3.0	14.0	5.9	1.0	1.9	3.4	3.3	2.9	4.7	4.8
LnGrp Delay(d),s/veh	33.6	19.1	16.9	124.3	13.5	10.6	16.9	21.6	21.9	17.6	23.0	23.0
LnGrp LOS	C	B	B	F	B	B	B	C	C	B	C	C
Approach Vol, veh/h		1036			1326			553			768	
Approach Delay, s/veh		19.4			42.9			20.5			21.5	
Approach LOS		B			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	26.4	8.0	20.4	6.5	33.8	8.0	20.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	25.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	14.0	14.5	5.8	11.3	4.0	14.2	7.9	9.2				
Green Ext Time (p_c), s	0.0	7.9	0.0	5.1	0.0	11.4	0.0	5.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				28.5								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
5: Kraemer & Bastanchury

2040 Proposed GP AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑↓		↔	↑↑↑		↔	↑↓		↔	↑↑↑	
Traffic Volume (veh/h)	222	708	223	163	864	72	178	541	163	70	958	231
Future Volume (veh/h)	222	708	223	163	864	72	178	541	163	70	958	231
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	234	745	235	172	909	76	187	569	172	74	1008	243
Adj No. of Lanes	2	2	0	1	3	0	2	2	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	936	295	236	1806	151	250	922	278	129	1407	339
Arrive On Green	0.11	0.35	0.35	0.13	0.38	0.38	0.07	0.34	0.34	0.07	0.34	0.34
Sat Flow, veh/h	3442	2649	836	1774	4784	399	3442	2681	808	1774	4094	985
Grp Volume(v), veh/h	234	498	482	172	643	342	187	375	366	74	834	417
Grp Sat Flow(s),veh/h/ln	1721	1770	1715	1774	1695	1792	1721	1770	1720	1774	1695	1689
Q Serve(g_s), s	5.4	20.9	20.9	7.7	12.0	12.1	4.4	14.6	14.6	3.3	17.7	17.7
Cycle Q Clear(g_c), s	5.4	20.9	20.9	7.7	12.0	12.1	4.4	14.6	14.6	3.3	17.7	17.7
Prop In Lane	1.00		0.49	1.00		0.22	1.00		0.47	1.00		0.58
Lane Grp Cap(c), veh/h	375	625	606	236	1280	677	250	608	591	129	1165	581
V/C Ratio(X)	0.62	0.80	0.80	0.73	0.50	0.50	0.75	0.62	0.62	0.57	0.72	0.72
Avail Cap(c_a), veh/h	375	643	624	236	1315	695	250	643	625	129	1232	614
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	24.0	24.0	34.3	19.7	19.8	37.5	22.5	22.6	37.0	23.6	23.6
Incr Delay (d2), s/veh	3.2	6.7	6.9	10.7	0.3	0.6	11.7	1.6	1.7	6.0	1.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	11.3	11.0	4.5	5.7	6.1	2.5	7.4	7.2	1.8	8.5	8.8
LnGrp Delay(d),s/veh	38.3	30.8	31.0	45.0	20.0	20.3	49.2	24.2	24.3	43.1	25.5	27.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1214			1157			928			1325	
Approach Delay, s/veh		32.3			23.8			29.3			27.1	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	31.2	8.0	30.4	11.0	33.2	8.0	30.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	28.0	28.0	4.0	28.0	7.0	30.0	4.0	28.0				
Max Q Clear Time (g_c+19), s	22.9	22.9	6.4	19.7	7.4	14.1	5.3	16.6				
Green Ext Time (p_c), s	0.0	4.3	0.0	6.6	0.0	11.2	0.0	8.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				28.1								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
6: Valencia & Bastanchury

2040 Proposed GP AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	640	280	289	859	45	75	295	113	49	536	139
Future Volume (veh/h)	79	640	280	289	859	45	75	295	113	49	536	139
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	674	295	304	904	47	79	311	119	52	564	146
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1190	533	382	1588	83	250	912	342	361	1009	260
Arrive On Green	0.09	0.34	0.34	0.22	0.46	0.46	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	3423	178	736	2520	945	954	2786	719
Grp Volume(v), veh/h	83	674	295	304	467	484	79	217	213	52	358	352
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1831	736	1770	1696	954	1770	1736
Q Serve(g_s), s	3.1	10.9	10.6	11.3	13.4	13.4	6.7	6.2	6.4	2.9	11.2	11.3
Cycle Q Clear(g_c), s	3.1	10.9	10.6	11.3	13.4	13.4	18.0	6.2	6.4	9.3	11.2	11.3
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.56	1.00		0.41
Lane Grp Cap(c), veh/h	156	1190	533	382	821	850	250	641	614	361	641	628
V/C Ratio(X)	0.53	0.57	0.55	0.80	0.57	0.57	0.32	0.34	0.35	0.14	0.56	0.56
Avail Cap(c_a), veh/h	229	1373	614	382	839	868	269	686	658	386	686	673
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	18.9	18.8	25.8	13.6	13.6	25.0	16.1	16.2	19.6	17.8	17.8
Incr Delay (d2), s/veh	2.8	0.4	0.9	11.1	0.9	0.9	0.7	0.3	0.3	0.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.3	4.7	6.7	6.7	6.9	1.4	3.1	3.0	0.8	5.6	5.5
LnGrp Delay(d),s/veh	33.2	19.4	19.7	36.9	14.5	14.4	25.7	16.5	16.5	19.8	18.6	18.7
LnGrp LOS	C	B	B	D	B	B	C	B	B	B	B	B
Approach Vol, veh/h		1052			1255			509			762	
Approach Delay, s/veh		20.6			19.9			17.9			18.7	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	25.4		27.2	8.1	34.3		27.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	3.0	25.0		25.0	7.0	31.0		25.0				
Max Q Clear Time (g_c+I), s	13.3	12.9		13.3	5.1	15.4		20.0				
Green Ext Time (p_c), s	0.0	8.5		6.1	0.0	10.3		3.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.6								
HCM 2010 LOS				B								





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	747	33	31	1022	28	41	30	76	45	28	17
Future Volume (veh/h)	10	747	33	31	1022	28	41	30	76	45	28	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	786	35	33	1076	29	43	32	80	47	29	18
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	472	2247	100	583	2292	62	220	95	186	310	148	69
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	508	3452	154	664	3521	95	351	416	819	639	649	305
Grp Volume(v), veh/h	11	403	418	33	541	564	155	0	0	94	0	0
Grp Sat Flow(s),veh/h/ln	508	1770	1836	664	1770	1846	1586	0	0	1593	0	0
Q Serve(g_s), s	0.4	3.4	3.4	0.8	5.1	5.1	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.4	3.4	3.4	4.2	5.1	5.1	2.7	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.05	0.28		0.52	0.50		0.19
Lane Grp Cap(c), veh/h	472	1152	1195	583	1152	1202	501	0	0	527	0	0
V/C Ratio(X)	0.02	0.35	0.35	0.06	0.47	0.47	0.31	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	558	1453	1507	695	1453	1515	1520	0	0	1491	0	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.2	2.6	2.6	3.5	2.9	2.9	10.8	0.0	0.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.0	0.3	0.3	0.3	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.1	1.6	1.7	0.1	2.5	2.6	1.3	0.0	0.0	0.7	0.0	0.0	0.0
LnGrp Delay(d),s/veh	4.3	2.8	2.8	3.6	3.2	3.2	11.2	0.0	0.0	10.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		832			1138			155			94	
Approach Delay, s/veh		2.8			3.2			11.2			10.5	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.5		23.4		9.5		23.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		4.7		7.4		3.4		7.1				
Green Ext Time (p_c), s		1.5		12.0		1.5		12.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				3.9								
HCM 2010 LOS				A								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑			↖ ↑↑↑			↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	20	898	66	291	1359	76	177	55	256	103	83	27
Future Volume (veh/h)	20	898	66	291	1359	76	177	55	256	103	83	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	21	945	69	306	1431	80	186	58	269	108	87	28
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	1936	141	329	2605	146	458	564	480	428	409	132
Arrive On Green	0.06	0.40	0.40	0.19	0.53	0.53	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	4838	352	1774	4929	276	1272	1863	1583	1049	1351	435
Grp Volume(v), veh/h	21	662	352	306	984	527	186	58	269	108	0	115
Grp Sat Flow(s),veh/h/ln	1774	1695	1801	1774	1695	1814	1272	1863	1583	1049	0	1786
Q Serve(g_s), s	0.6	7.8	7.9	9.2	10.4	10.4	6.9	1.2	7.7	4.5	0.0	2.6
Cycle Q Clear(g_c), s	0.6	7.8	7.9	9.2	10.4	10.4	9.5	1.2	7.7	5.7	0.0	2.6
Prop In Lane	1.00		0.20	1.00		0.15	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	101	1357	721	329	1792	959	458	564	480	428	0	541
V/C Ratio(X)	0.21	0.49	0.49	0.93	0.55	0.55	0.41	0.10	0.56	0.25	0.00	0.21
Avail Cap(c_a), veh/h	197	1509	801	329	1792	959	780	1036	881	693	0	994
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	12.0	12.1	21.6	8.4	8.4	17.5	13.5	15.8	15.6	0.0	14.0
Incr Delay (d2), s/veh	1.0	0.3	0.5	32.1	0.4	0.7	0.6	0.1	1.0	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.7	4.0	7.4	4.9	5.3	2.5	0.6	3.5	1.3	0.0	1.3
LnGrp Delay(d),s/veh	25.3	12.3	12.6	53.7	8.8	9.1	18.1	13.6	16.8	15.9	0.0	14.2
LnGrp LOS	C	B	B	D	A	A	B	B	B	B		B
Approach Vol, veh/h		1035			1817			513			223	
Approach Delay, s/veh		12.7			16.5			16.9			15.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	2.0	23.6		18.3	5.1	30.5		18.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	22.0		28.0	4.0	26.0		28.0				
Max Q Clear Time (g_c+11), s	9.9	9.9		7.7	2.6	12.4		11.5				
Green Ext Time (p_c), s	0.0	9.7		3.0	0.0	11.6		2.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				15.3								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑		↔↔	↑↑↑		↔↔	↑↑	↔	↔	↑↑↑	↔
Traffic Volume (veh/h)	235	904	167	240	1202	144	228	418	191	210	973	268
Future Volume (veh/h)	235	904	167	240	1202	144	228	418	191	210	973	268
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	952	176	253	1265	152	240	440	201	221	1024	282
Adj No. of Lanes	2	3	0	1	3	0	2	2	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	1634	301	212	1757	211	247	1059	474	191	1703	530
Arrive On Green	0.12	0.38	0.38	0.12	0.38	0.38	0.07	0.30	0.30	0.11	0.33	0.33
Sat Flow, veh/h	3442	4317	796	1774	4602	553	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	247	747	381	253	932	485	240	440	201	221	1024	282
Grp Sat Flow(s),veh/h/ln	1721	1695	1722	1774	1695	1765	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	5.7	14.7	14.8	10.0	19.6	19.6	5.8	8.3	8.5	9.0	14.0	12.1
Cycle Q Clear(g_c), s	5.7	14.7	14.8	10.0	19.6	19.6	5.8	8.3	8.5	9.0	14.0	12.1
Prop In Lane	1.00		0.46	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	1283	652	212	1294	674	247	1059	474	191	1703	530
V/C Ratio(X)	0.62	0.58	0.58	1.19	0.72	0.72	0.97	0.42	0.42	1.16	0.60	0.53
Avail Cap(c_a), veh/h	411	1336	679	212	1336	696	247	1268	567	191	2004	624
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	20.7	20.8	36.9	22.1	22.1	38.8	23.5	23.6	37.4	23.2	22.5
Incr Delay (d2), s/veh	2.7	0.6	1.2	124.1	1.9	3.5	49.6	0.3	0.6	114.5	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.0	7.2	12.1	9.5	10.2	4.4	4.1	3.8	10.4	6.6	5.3
LnGrp Delay(d),s/veh	37.9	21.4	22.0	161.0	23.9	25.6	88.4	23.7	24.2	151.9	23.6	23.4
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1375			1670			881			1527	
Approach Delay, s/veh		24.5			45.2			41.5			42.1	
Approach LOS		C			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.0	33.7	8.0	30.0	11.7	34.0	11.0	27.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	31.0	4.0	31.0	8.0	31.0	7.0	28.0				
Max Q Clear Time (g_c+11.2), s	11.2	16.8	7.8	16.0	7.7	21.6	11.0	10.5				
Green Ext Time (p_c), s	0.0	12.1	0.0	10.0	0.0	8.3	0.0	11.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					38.5							
HCM 2010 LOS					D							

HCM Signalized Intersection Capacity Analysis  
10: Palm & Yorba Linda

2040 Proposed GP AM  
07/12/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	1013	285	78	1299	278	41
Future Volume (vph)	1013	285	78	1299	278	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0		2.0	2.0	2.0	
Lane Util. Factor	0.91		1.00	0.95	0.97	
Frt	0.97		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	4918		1770	3539	3396	
Flt Permitted	1.00		0.17	1.00	0.96	
Satd. Flow (perm)	4918		317	3539	3396	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1066	300	82	1367	293	43
RTOR Reduction (vph)	78	0	0	0	30	0
Lane Group Flow (vph)	1288	0	82	1367	306	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	6	
Permitted Phases			8		6	
Actuated Green, G (s)	21.5		21.5	21.5	8.7	
Effective Green, g (s)	23.5		23.5	23.5	10.7	
Actuated g/C Ratio	0.62		0.62	0.62	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3025		195	2177	951	
v/s Ratio Prot	0.26			c0.39	c0.09	
v/s Ratio Perm			0.26			
v/c Ratio	0.43		0.42	0.63	0.32	
Uniform Delay, d1	3.8		3.8	4.6	10.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1		1.5	0.6	0.2	
Delay (s)	3.9		5.3	5.2	11.1	
Level of Service	A		A	A	B	
Approach Delay (s)	3.9			5.2	11.1	
Approach LOS	A			A	B	

Intersection Summary

HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	38.2	Sum of lost time (s)	4.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 11: Valencia & Yorba Linda

2040 Proposed GP AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	704	31	41	831	165	50	330	64	160	364	456
Future Volume (veh/h)	261	704	31	41	831	165	50	330	64	160	364	456
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	275	741	33	43	875	174	53	347	67	168	383	480
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1464	655	112	1313	564	227	1284	245	454	766	685
Arrive On Green	0.11	0.41	0.41	0.06	0.37	0.37	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	638	2966	567	968	1770	1583
Grp Volume(v), veh/h	275	741	33	43	875	174	53	206	208	168	383	480
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	638	1770	1763	968	1770	1583
Q Serve(g_s), s	7.0	10.3	0.8	1.5	13.7	5.4	4.9	4.9	5.0	9.0	10.4	16.4
Cycle Q Clear(g_c), s	7.0	10.3	0.8	1.5	13.7	5.4	21.2	4.9	5.0	14.0	10.4	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	187	1464	655	112	1313	564	227	766	763	454	766	685
V/C Ratio(X)	1.47	0.51	0.05	0.38	0.67	0.31	0.23	0.27	0.27	0.37	0.50	0.70
Avail Cap(c_a), veh/h	187	1495	669	161	1441	619	240	801	798	473	801	716
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	14.4	11.6	29.8	17.4	14.8	24.0	12.1	12.1	16.6	13.6	15.3
Incr Delay (d2), s/veh	237.4	0.3	0.0	2.1	1.0	0.3	0.5	0.2	0.2	0.5	0.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ft	5.7	5.0	0.4	0.8	6.9	2.3	0.9	2.4	2.5	2.4	5.1	7.6
LnGrp Delay(d),s/veh	267.0	14.7	11.7	32.0	18.5	15.1	24.5	12.3	12.3	17.1	14.1	18.2
LnGrp LOS	F	B	B	C	B	B	C	B	B	B	B	B
Approach Vol, veh/h		1049			1092			467			1031	
Approach Delay, s/veh		80.8			18.5			13.7			16.5	
Approach LOS		F			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	29.4		30.7	9.0	26.6		30.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	26.0		28.0	5.0	25.0		28.0				
Max Q Clear Time (g_c+13), s	13.5	12.3		18.4	9.0	15.7		23.2				
Green Ext Time (p_c), s	0.0	9.4		6.2	0.0	6.9		3.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				35.2								
HCM 2010 LOS				D								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	610	72	286	738	166	102	529	156	145	1051	106
Future Volume (veh/h)	111	610	72	286	738	166	102	529	156	145	1051	106
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1788	1863	1863	1863
Adj Flow Rate, veh/h	117	642	76	301	777	175	107	557	164	153	1106	112
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	1101	473	311	1343	577	133	1197	514	133	1197	536
Arrive On Green	0.11	0.31	0.31	0.18	0.38	0.38	0.08	0.34	0.34	0.08	0.34	0.34
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3539	1520	1774	3539	1583
Grp Volume(v), veh/h	117	642	76	301	777	175	107	557	164	153	1106	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1770	1520	1774	1770	1583
Q Serve(g_s), s	5.0	12.2	2.9	13.5	13.9	6.4	4.7	9.9	6.4	6.0	24.0	4.0
Cycle Q Clear(g_c), s	5.0	12.2	2.9	13.5	13.9	6.4	4.7	9.9	6.4	6.0	24.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	1101	473	311	1343	577	133	1197	514	133	1197	536
V/C Ratio(X)	0.62	0.58	0.16	0.97	0.58	0.30	0.80	0.47	0.32	1.15	0.92	0.21
Avail Cap(c_a), veh/h	222	1330	571	311	1508	647	133	1197	514	133	1197	536
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	23.1	19.9	32.7	19.7	17.4	36.3	20.7	19.6	36.9	25.4	18.8
Incr Delay (d2), s/veh	3.9	0.5	0.2	42.1	0.4	0.3	28.6	0.3	0.4	123.0	11.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.0	1.2	10.2	6.9	2.7	3.4	4.8	2.7	7.4	13.7	1.8
LnGrp Delay(d),s/veh	37.9	23.6	20.1	74.8	20.1	17.7	64.9	21.0	19.9	159.9	37.3	19.0
LnGrp LOS	D	C	C	E	C	B	E	C	B	F	D	B
Approach Vol, veh/h		835			1253			828			1371	
Approach Delay, s/veh		25.3			32.9			26.5			49.5	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	26.8	8.0	29.0	10.5	32.3	8.0	29.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	2.0	28.0	4.0	25.0	8.0	32.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	5.5	14.2	6.7	26.0	7.0	15.9	8.0	11.9				
Green Ext Time (p_c), s	0.0	8.6	0.0	0.0	0.0	9.6	0.0	9.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			35.5									
HCM 2010 LOS			D									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕	↕	↕↕	↕	↕	↕↕	↕
Traffic Volume (veh/h)	26	54	12	277	23	132	3	729	194	65	1346	16
Future Volume (veh/h)	26	54	12	277	23	132	3	729	194	65	1346	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	57	13	292	24	139	3	767	204	68	1417	17
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	127	767	112	0	767	63	1199	537	142	1356	607
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.04	0.34	0.34	0.08	0.38	0.38
Sat Flow, veh/h	0	261	1583	0	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	84	0	13	316	0	139	3	767	204	68	1417	17
Grp Sat Flow(s),veh/h/ln	261	0	1583	0	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.3	0.0	0.0	3.1	0.1	11.3	6.1	2.3	23.7	0.4
Cycle Q Clear(g_c), s	30.0	0.0	0.3	30.0	0.0	3.1	0.1	11.3	6.1	2.3	23.7	0.4
Prop In Lane	0.32		1.00	0.92		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	767	112	0	767	63	1199	537	142	1356	607
V/C Ratio(X)	0.41	0.00	0.02	2.83	0.00	0.18	0.05	0.64	0.38	0.48	1.04	0.03
Avail Cap(c_a), veh/h	203	0	767	112	0	767	172	1314	588	172	1356	607
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	8.3	31.0	0.0	9.0	28.9	17.3	15.5	27.3	19.1	11.9
Incr Delay (d2), s/veh	1.3	0.0	0.0	845.7	0.0	0.1	0.3	0.9	0.4	2.5	37.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.1	28.2	0.0	1.3	0.1	5.7	2.7	1.2	18.5	0.2
LnGrp Delay(d),s/veh	15.3	0.0	8.3	876.7	0.0	9.1	29.2	18.2	16.0	29.8	56.1	11.9
LnGrp LOS	B		A	F		A	C	B	B	C	F	B
Approach Vol, veh/h		97			455			974			1502	
Approach Delay, s/veh		14.4			611.6			17.8			54.4	
Approach LOS		B			F			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	4.2	25.7		32.0	6.9	23.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		32.0	2.1	25.7		32.0	4.3	13.3				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	5.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			125.1									
HCM 2010 LOS			F									

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕				↕		↵	↕	↵
Traffic Vol, veh/h	72	428	18	25	308	146	0	6	39	18	239	37	62
Future Vol, veh/h	72	428	18	25	308	146	0	6	39	18	239	37	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	451	19	26	324	154	0	6	41	19	252	39	65
Number of Lanes	1	2	0	1	2	0	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	3	3
HCM Control Delay	19	17.5	13.1	18
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	10%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	62%	0%	100%	89%	0%	100%	41%	0%	100%	0%
Vol Right, %	29%	0%	0%	11%	0%	0%	59%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	63	72	285	161	25	205	249	239	37	62
LT Vol	6	72	0	0	25	0	0	239	0	0
Through Vol	39	0	285	143	0	205	103	0	37	0
RT Vol	18	0	0	18	0	0	146	0	0	62
Lane Flow Rate	66	76	300	169	26	216	262	252	39	65
Geometry Grp	8	8	8	8	8	8	8	7	7	7
Degree of Util (X)	0.16	0.172	0.64	0.356	0.061	0.467	0.535	0.566	0.082	0.125
Departure Headway (Hd)	8.682	8.177	7.666	7.586	8.294	7.783	7.362	8.104	7.598	6.89
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	412	438	472	474	431	463	489	445	471	519
Service Time	6.457	5.935	5.424	5.343	6.052	5.54	5.12	5.856	5.35	4.641
HCM Lane V/C Ratio	0.16	0.174	0.636	0.357	0.06	0.467	0.536	0.566	0.083	0.125
HCM Control Delay	13.1	12.6	23.2	14.5	11.6	17.2	18.3	21	11	10.6
HCM Lane LOS	B	B	C	B	B	C	C	C	B	B
HCM 95th-tile Q	0.6	0.6	4.4	1.6	0.2	2.4	3.1	3.4	0.3	0.4



HCM 2010 Signalized Intersection Summary  
15: Rose & Palm

2040 Proposed GP AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗		↖	↗	↖	↑↑	↗	↖	↑↑	↗
Traffic Volume (veh/h)	60	2	635	15	12	9	347	840	7	4	1359	58
Future Volume (veh/h)	60	2	635	15	12	9	347	840	7	4	1359	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	63	2	668	16	13	9	365	884	7	4	1431	61
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	559	657	913	257	191	536	397	1942	834	49	1249	536
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.22	0.55	0.55	0.03	0.35	0.35
Sat Flow, veh/h	1384	1863	1583	542	541	1520	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	63	2	668	29	0	9	365	884	7	4	1431	61
Grp Sat Flow(s),veh/h/ln	1384	1863	1583	1083	0	1520	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	2.7	0.1	26.3	0.0	0.0	0.3	17.1	12.8	0.2	0.2	30.0	2.3
Cycle Q Clear(g_c), s	3.5	0.1	26.3	0.9	0.0	0.3	17.1	12.8	0.2	0.2	30.0	2.3
Prop In Lane	1.00		1.00	0.55		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	559	657	913	448	0	536	397	1942	834	49	1249	536
V/C Ratio(X)	0.11	0.00	0.73	0.06	0.00	0.02	0.92	0.46	0.01	0.08	1.15	0.11
Avail Cap(c_a), veh/h	559	657	913	448	0	536	397	1942	834	125	1249	536
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	17.8	13.2	18.1	0.0	17.9	32.3	11.5	8.7	40.3	27.5	18.5
Incr Delay (d2), s/veh	0.1	0.0	3.0	0.1	0.0	0.0	26.4	0.2	0.0	0.7	75.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	12.1	0.5	0.0	0.1	11.2	6.2	0.1	0.1	27.6	1.0
LnGrp Delay(d),s/veh	19.3	17.8	16.2	18.1	0.0	17.9	58.7	11.7	8.7	41.0	102.9	18.6
LnGrp LOS	B	B	B	B		B	E	B	A	D	F	B
Approach Vol, veh/h		733			38			1256			1496	
Approach Delay, s/veh		16.5			18.1			25.3			99.3	
Approach LOS		B			B			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	21.0	32.0		32.0	4.4	48.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		28.3	19.1	32.0		2.9	2.2	14.8				
Green Ext Time (p_c), s		0.0	0.0	0.0		3.3	0.0	20.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			54.8									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary  
 16: Bradford & Madison

2040 Proposed GP AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	123	107	295	151	70	69	291	220	86	344	91
Future Volume (veh/h)	97	123	107	295	151	70	69	291	220	86	344	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	102	129	113	311	159	74	73	306	232	91	362	96
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	362	295	646	523	445	500	635	540	517	648	529
Arrive On Green	0.11	0.19	0.19	0.19	0.28	0.28	0.10	0.34	0.34	0.10	0.35	0.35
Sat Flow, veh/h	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Grp Volume(v), veh/h	102	129	113	311	159	74	73	306	232	91	362	96
Grp Sat Flow(s),veh/h/ln	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Q Serve(g_s), s	2.0	2.8	3.0	5.7	3.1	1.7	1.1	6.1	5.3	1.4	7.4	2.1
Cycle Q Clear(g_c), s	2.0	2.8	3.0	5.7	3.1	1.7	1.1	6.1	5.3	1.4	7.4	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	362	295	646	523	445	500	635	540	517	648	529
V/C Ratio(X)	0.18	0.36	0.38	0.48	0.30	0.17	0.15	0.48	0.43	0.18	0.56	0.18
Avail Cap(c_a), veh/h	603	954	778	646	1073	912	558	1113	946	563	1113	908
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	16.3	16.4	9.6	13.3	12.7	8.3	12.2	11.9	8.0	12.4	10.6
Incr Delay (d2), s/veh	0.2	0.6	0.8	0.6	0.3	0.2	0.1	0.6	0.5	0.2	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.5	1.3	2.8	1.6	0.7	0.5	3.2	2.4	0.7	3.9	0.9
LnGrp Delay(d),s/veh	12.3	16.9	17.3	10.2	13.6	12.9	8.5	12.7	12.5	8.1	13.1	10.8
LnGrp LOS	B	B	B	B	B	B	A	B	B	A	B	B
Approach Vol, veh/h		344			544			611			549	
Approach Delay, s/veh		15.7			11.5			12.1			11.9	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	18.0	11.0	11.1	6.5	18.3	6.9	15.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	7.0	22.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	4.0	8.1	7.7	5.0	3.1	9.4	4.0	5.1				
Green Ext Time (p_c), s	0.0	5.1	0.0	2.1	0.0	4.9	0.0	2.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.5								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	16	326	18	101	60	264	743	4	18	1446	216
Future Volume (veh/h)	121	16	326	18	101	60	264	743	4	18	1446	216
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1900	1863	1863	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	127	17	343	19	106	63	278	782	4	19	1522	227
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	595	486	115	518	506	331	1849	794	486	1666	716
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.10	0.52	0.52	0.05	0.47	0.47
Sat Flow, veh/h	1211	1863	1520	132	1621	1583	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	127	17	343	125	0	63	278	782	4	19	1522	227
Grp Sat Flow(s),veh/h/ln	1211	1863	1520	1753	0	1583	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	4.9	0.4	11.4	0.0	0.0	1.6	4.1	7.8	0.1	0.3	22.9	5.3
Cycle Q Clear(g_c), s	7.7	0.4	11.4	2.8	0.0	1.6	4.1	7.8	0.1	0.3	22.9	5.3
Prop In Lane	1.00		1.00	0.15		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	595	486	633	0	506	331	1849	794	486	1666	716
V/C Ratio(X)	0.28	0.03	0.71	0.20	0.00	0.12	0.84	0.42	0.01	0.04	0.91	0.32
Avail Cap(c_a), veh/h	1992	2961	2416	2733	0	2517	331	1849	794	577	1669	717
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	13.4	17.1	14.2	0.0	13.8	12.3	8.4	6.5	6.8	14.1	9.4
Incr Delay (d2), s/veh	0.3	0.0	1.9	0.2	0.0	0.1	17.1	0.2	0.0	0.0	8.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.2	5.0	1.5	0.0	0.7	3.8	3.7	0.0	0.1	12.9	2.3
LnGrp Delay(d),s/veh	17.3	13.4	19.0	14.4	0.0	13.9	29.4	8.5	6.5	6.8	22.2	9.7
LnGrp LOS	B	B	B	B		B	C	A	A	A	C	A
Approach Vol, veh/h		487			188			1064			1768	
Approach Delay, s/veh		18.4			14.2			14.0			20.4	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.3	8.0	29.0		20.3	5.0	31.9				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		89.0	4.0	25.0		89.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s		13.4	6.1	24.9		4.8	2.3	9.8				
Green Ext Time (p_c), s		2.9	0.0	0.1		2.9	0.0	13.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				17.8								
HCM 2010 LOS				B								



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	346	264	925	191	163	1877		
Future Volume (veh/h)	346	264	925	191	163	1877		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1788	1863	1863		
Adj Flow Rate, veh/h	364	278	974	201	172	1976		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	490	438	1685	724	273	2340		
Arrive On Green	0.28	0.28	0.48	0.48	0.15	0.66		
Sat Flow, veh/h	1774	1583	3632	1520	1774	3632		
Grp Volume(v), veh/h	364	278	974	201	172	1976		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1520	1774	1770		
Q Serve(g_s), s	12.0	9.9	12.7	5.1	5.8	27.4		
Cycle Q Clear(g_c), s	12.0	9.9	12.7	5.1	5.8	27.4		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	490	438	1685	724	273	2340		
V/C Ratio(X)	0.74	0.64	0.58	0.28	0.63	0.84		
Avail Cap(c_a), veh/h	749	668	1685	724	749	2710		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	21.1	20.3	12.1	10.1	25.4	8.3		
Incr Delay (d2), s/veh	2.2	1.5	0.5	0.2	2.4	2.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.1	8.6	6.2	2.2	3.0	13.7		
LnGrp Delay(d),s/veh	23.3	21.9	12.6	10.3	27.8	10.6		
LnGrp LOS	C	C	B	B	C	B		
Approach Vol, veh/h	642		1175			2148		
Approach Delay, s/veh	22.7		12.2			12.0		
Approach LOS	C		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.3		19.7	11.8	32.5
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				47.0		25.0	25.0	18.0
Max Q Clear Time (g_c+11), s				29.4		14.0	7.8	14.7
Green Ext Time (p_c), s				10.9		1.7	0.4	3.2
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			13.8					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis  
19: Placentia & Nutwood

2040 Proposed GP AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	19	123	84	181	5	130	385	74	3	789	613
Future Volume (vph)	136	19	123	84	181	5	130	385	74	3	789	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	0.93	
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1705	1583	1770	1856		1770	3453		1770	3307	
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.14	1.00		0.46	1.00	
Satd. Flow (perm)	1681	1705	1583	1770	1856		254	3453		855	3307	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	143	20	129	88	191	5	137	405	78	3	831	645
RTOR Reduction (vph)	0	0	111	0	2	0	0	30	0	0	250	0
Lane Group Flow (vph)	82	81	18	88	194	0	137	453	0	3	1226	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	5	5		1	1			8				4
Permitted Phases			5				8			4		
Actuated Green, G (s)	4.5	4.5	4.5	4.1	4.1		27.3	27.3		27.3	27.3	
Effective Green, g (s)	6.5	6.5	6.5	6.1	6.1		29.3	29.3		29.3	29.3	
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13		0.61	0.61		0.61	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	231	214	225	236		155	2112		522	2022	
v/s Ratio Prot	c0.05	0.05		0.05	c0.10			0.13			0.37	
v/s Ratio Perm			0.01				c0.54			0.00		
v/c Ratio	0.36	0.35	0.08	0.39	0.82		0.88	0.21		0.01	0.61	
Uniform Delay, d1	18.8	18.8	18.1	19.2	20.4		7.9	4.2		3.6	5.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.9	0.2	1.1	20.2		40.3	0.1		0.0	0.5	
Delay (s)	19.8	19.7	18.3	20.3	40.5		48.2	4.2		3.6	6.3	
Level of Service	B	B	B	C	D		D	A		A	A	
Approach Delay (s)		19.1			34.3			13.9			6.3	
Approach LOS		B			C			B			A	

Intersection Summary

HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	225	51	170	192	358	35	534	106	255	1313	220
Future Volume (veh/h)	141	225	51	170	192	358	35	534	106	255	1313	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	148	237	54	179	202	377	37	562	112	268	1382	232
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	547	125	366	693	589	97	1531	685	208	1753	753
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.05	0.43	0.43	0.12	0.50	0.50
Sat Flow, veh/h	831	1469	335	1084	1863	1583	1774	3539	1583	1774	3539	1520
Grp Volume(v), veh/h	148	0	291	179	202	377	37	562	112	268	1382	232
Grp Sat Flow(s),veh/h/ln	831	0	1804	1084	1863	1583	1774	1770	1583	1774	1770	1520
Q Serve(g_s), s	11.7	0.0	9.3	11.4	5.9	15.1	1.5	8.2	3.3	9.0	24.9	7.0
Cycle Q Clear(g_c), s	17.6	0.0	9.3	20.7	5.9	15.1	1.5	8.2	3.3	9.0	24.9	7.0
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	0	671	366	693	589	97	1531	685	208	1753	753
V/C Ratio(X)	0.44	0.00	0.43	0.49	0.29	0.64	0.38	0.37	0.16	1.29	0.79	0.31
Avail Cap(c_a), veh/h	387	0	774	428	799	679	138	1703	762	208	1841	791
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	18.1	25.8	17.0	19.9	35.1	14.7	13.3	34.0	16.1	11.6
Incr Delay (d2), s/veh	0.9	0.0	0.4	1.0	0.2	1.6	2.5	0.1	0.1	162.0	2.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	4.7	3.5	3.1	6.8	0.8	4.0	1.5	13.7	12.6	2.9
LnGrp Delay(d),s/veh	24.1	0.0	18.5	26.8	17.2	21.5	37.6	14.9	13.4	195.9	18.3	11.8
LnGrp LOS	C		B	C	B	C	D	B	B	F	B	B
Approach Vol, veh/h		439			758			711			1882	
Approach Delay, s/veh		20.4			21.6			15.8			42.8	
Approach LOS		C			C			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.6	6.2	40.1		30.6	11.0	35.3				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		31.0	4.0	38.0		31.0	7.0	35.0				
Max Q Clear Time (g_c+I1), s		19.6	3.5	26.9		22.7	11.0	10.2				
Green Ext Time (p_c), s		4.8	0.0	9.2		4.0	0.0	17.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.9									
HCM 2010 LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	298	343	258	122	302	137	94	645	14	194	1547	342
Future Volume (veh/h)	298	343	258	122	302	137	94	645	14	194	1547	342
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	314	361	272	128	318	144	99	679	15	204	1628	360
Adj No. of Lanes	1	2	0	1	2	0	2	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	637	473	211	680	302	274	1769	39	305	1804	562
Arrive On Green	0.16	0.33	0.33	0.12	0.29	0.29	0.08	0.35	0.35	0.09	0.35	0.35
Sat Flow, veh/h	1774	1939	1439	1774	2387	1059	3442	5120	113	3442	5085	1583
Grp Volume(v), veh/h	314	329	304	128	234	228	99	449	245	204	1628	360
Grp Sat Flow(s),veh/h/ln	1774	1770	1609	1774	1770	1676	1721	1695	1843	1721	1695	1583
Q Serve(g_s), s	11.0	10.4	10.6	4.6	7.4	7.6	1.8	6.8	6.8	3.9	20.6	12.8
Cycle Q Clear(g_c), s	11.0	10.4	10.6	4.6	7.4	7.6	1.8	6.8	6.8	3.9	20.6	12.8
Prop In Lane	1.00		0.89	1.00		0.63	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	288	582	529	211	504	478	274	1171	637	305	1804	562
V/C Ratio(X)	1.09	0.57	0.58	0.61	0.46	0.48	0.36	0.38	0.38	0.67	0.90	0.64
Avail Cap(c_a), veh/h	288	994	904	236	942	892	305	1203	654	305	1804	562
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	18.7	18.8	28.3	19.9	20.0	29.5	16.7	16.7	29.9	20.7	18.2
Incr Delay (d2), s/veh	78.7	0.9	1.0	3.6	0.7	0.7	0.8	0.2	0.4	5.5	6.8	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.2	4.8	2.5	3.7	3.6	0.9	3.2	3.5	2.1	10.6	6.0
LnGrp Delay(d),s/veh	107.1	19.6	19.8	31.9	20.6	20.8	30.3	16.9	17.1	35.4	27.5	20.7
LnGrp LOS	F	B	B	C	C	C	C	B	B	D	C	C
Approach Vol, veh/h		947			590			793			2192	
Approach Delay, s/veh		48.7			23.1			18.6			27.1	
Approach LOS		D			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	24.2	7.4	26.0	13.0	21.3	8.0	25.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	36.0	4.0	22.0	9.0	34.0	4.0	22.0				
Max Q Clear Time (g_c+10), s	4.0	12.6	3.8	22.6	13.0	9.6	5.9	8.8				
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	7.7	0.0	11.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				29.6								
HCM 2010 LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	24	304	233	116	321	7	107	11	46	6	57	55
Future Volume (veh/h)	24	304	233	116	321	7	107	11	46	6	57	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	25	320	245	122	338	7	113	12	48	6	60	58
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	813	609	257	1702	35	501	467	397	549	453	389
Arrive On Green	0.09	0.42	0.42	0.14	0.48	0.48	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1774	1931	1446	1774	3546	73	1269	1863	1583	1337	1806	1552
Grp Volume(v), veh/h	25	293	272	122	168	177	113	12	48	6	59	59
Grp Sat Flow(s),veh/h/ln	1774	1770	1608	1774	1770	1850	1269	1863	1583	1337	1770	1589
Q Serve(g_s), s	0.4	3.8	3.9	2.1	1.8	1.8	2.5	0.2	0.8	0.1	0.8	1.0
Cycle Q Clear(g_c), s	0.4	3.8	3.9	2.1	1.8	1.8	3.4	0.2	0.8	0.3	0.8	1.0
Prop In Lane	1.00		0.90	1.00		0.04	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	153	745	677	257	849	888	501	467	397	549	443	398
V/C Ratio(X)	0.16	0.39	0.40	0.47	0.20	0.20	0.23	0.03	0.12	0.01	0.13	0.15
Avail Cap(c_a), veh/h	326	1624	1475	380	1678	1754	1231	1539	1308	1318	1462	1312
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	6.6	6.6	12.8	4.9	4.9	10.9	9.2	9.5	9.3	9.5	9.5
Incr Delay (d2), s/veh	0.5	0.3	0.4	1.4	0.1	0.1	0.2	0.0	0.1	0.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.9	1.7	1.1	0.9	0.9	0.9	0.1	0.3	0.0	0.4	0.4
LnGrp Delay(d),s/veh	14.3	6.9	7.0	14.2	5.0	5.0	11.1	9.3	9.6	9.3	9.6	9.7
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		590			467			173			124	
Approach Delay, s/veh		7.3			7.4			10.6			9.7	
Approach LOS		A			A			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	15.8		10.2	4.8	17.7		10.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	28.0	28.0		25.0	4.0	29.0		25.0				
Max Q Clear Time (g_c+14), s	5.9	5.9		3.0	2.4	3.8		5.4				
Green Ext Time (p_c), s	0.0	5.9		1.2	0.0	6.1		1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.9								
HCM 2010 LOS				A								



HCM 2010 Signalized Intersection Summary  
 23: Placentia & Chapman

2040 Proposed GP AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↔	↔	↑↑	↔	↔↔	↑↑		↔	↑↑	
Traffic Volume (veh/h)	155	610	187	128	743	80	291	361	147	135	678	172
Future Volume (veh/h)	155	610	187	128	743	80	291	361	147	135	678	172
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	642	197	135	782	84	306	380	155	142	714	181
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	1121	686	207	1197	536	401	836	336	220	970	246
Arrive On Green	0.09	0.32	0.32	0.12	0.34	0.34	0.12	0.34	0.34	0.12	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	3442	2465	992	1774	2798	709
Grp Volume(v), veh/h	163	642	197	135	782	84	306	271	264	142	451	444
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1721	1770	1688	1774	1770	1738
Q Serve(g_s), s	3.5	11.7	6.2	5.6	14.5	2.9	6.7	9.2	9.5	5.9	17.3	17.3
Cycle Q Clear(g_c), s	3.5	11.7	6.2	5.6	14.5	2.9	6.7	9.2	9.5	5.9	17.3	17.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		0.41
Lane Grp Cap(c), veh/h	327	1121	686	207	1197	536	401	600	572	220	614	602
V/C Ratio(X)	0.50	0.57	0.29	0.65	0.65	0.16	0.76	0.45	0.46	0.65	0.74	0.74
Avail Cap(c_a), veh/h	356	1328	779	207	1374	615	401	618	590	276	687	675
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	22.0	14.2	32.6	21.7	17.9	33.1	19.9	20.0	32.2	22.1	22.1
Incr Delay (d2), s/veh	1.2	0.5	0.2	7.2	0.9	0.1	8.4	0.5	0.6	3.5	3.7	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.8	2.8	3.1	7.2	1.3	3.6	4.6	4.5	3.1	9.0	8.9
LnGrp Delay(d),s/veh	34.4	22.5	14.4	39.8	22.6	18.0	41.5	20.5	20.6	35.7	25.8	25.9
LnGrp LOS	C	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1002			1001			841			1037	
Approach Delay, s/veh		22.8			24.6			28.2			27.2	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	26.5	11.0	28.8	9.3	28.1	11.6	28.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	27.0	7.0	28.0	6.0	28.0	10.0	25.0				
Max Q Clear Time (g_c+11), s	6.0	13.7	8.7	19.3	5.5	16.5	7.9	11.5				
Green Ext Time (p_c), s	0.0	8.5	0.0	5.5	0.0	7.6	0.1	7.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					25.6							
HCM 2010 LOS					C							



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	220	541	20	85	808	195	25	300	54	101	220	268
Future Volume (veh/h)	220	541	20	85	808	195	25	300	54	101	220	268
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	232	569	21	89	851	205	26	316	57	106	232	282
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	332	1700	63	171	1125	271	313	943	168	355	585	497
Arrive On Green	0.19	0.49	0.49	0.10	0.40	0.40	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1774	3481	128	1774	2830	682	883	3002	535	1005	1863	1583
Grp Volume(v), veh/h	232	289	301	89	532	524	26	185	188	106	232	282
Grp Sat Flow(s),veh/h/ln	1774	1770	1840	1774	1770	1742	883	1770	1768	1005	1863	1583
Q Serve(g_s), s	7.3	5.9	5.9	2.8	15.4	15.4	1.4	4.7	4.9	5.4	5.8	8.8
Cycle Q Clear(g_c), s	7.3	5.9	5.9	2.8	15.4	15.4	7.2	4.7	4.9	10.2	5.8	8.8
Prop In Lane	1.00		0.07	1.00		0.39	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	332	864	898	171	704	693	313	556	556	355	585	497
V/C Ratio(X)	0.70	0.33	0.34	0.52	0.76	0.76	0.08	0.33	0.34	0.30	0.40	0.57
Avail Cap(c_a), veh/h	359	865	899	239	745	734	437	805	804	496	847	720
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	9.3	9.3	25.5	15.4	15.4	18.8	15.6	15.6	19.5	15.9	17.0
Incr Delay (d2), s/veh	5.4	0.2	0.2	2.4	4.2	4.3	0.1	0.3	0.4	0.5	0.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.9	3.1	1.5	8.2	8.1	0.3	2.4	2.4	1.5	3.0	4.0
LnGrp Delay(d),s/veh	28.0	9.5	9.5	27.9	19.6	19.7	18.9	15.9	16.0	20.0	16.4	18.0
LnGrp LOS	C	A	A	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		822			1145			399			620	
Approach Delay, s/veh		14.7			20.3			16.1			17.7	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	31.0		20.6	13.1	25.6		20.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	27.0		25.0	10.0	23.0		25.0				
Max Q Clear Time (g_c+14), s	14.8	7.9		12.2	9.3	17.4		9.2				
Green Ext Time (p_c), s	0.0	10.7		4.4	0.1	4.2		4.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			17.7									
HCM 2010 LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	426	315	191	565	76	225	385	147	66	1162	216
Future Volume (veh/h)	178	426	315	191	565	76	225	385	147	66	1162	216
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	187	448	332	201	595	80	237	405	155	69	1223	227
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1169	502	183	1123	482	160	1426	522	133	1607	298
Arrive On Green	0.12	0.33	0.33	0.10	0.32	0.32	0.09	0.39	0.39	0.07	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3673	1343	1774	4311	800
Grp Volume(v), veh/h	187	448	332	201	595	80	237	372	188	69	962	488
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1626	1774	1695	1722
Q Serve(g_s), s	8.1	7.5	14.5	8.0	10.7	2.9	7.0	5.8	6.2	2.9	19.2	19.2
Cycle Q Clear(g_c), s	8.1	7.5	14.5	8.0	10.7	2.9	7.0	5.8	6.2	2.9	19.2	19.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.46
Lane Grp Cap(c), veh/h	206	1169	502	183	1123	482	160	1317	631	133	1264	642
V/C Ratio(X)	0.91	0.38	0.66	1.10	0.53	0.17	1.48	0.28	0.30	0.52	0.76	0.76
Avail Cap(c_a), veh/h	206	1462	628	183	1417	608	160	1357	651	137	1313	667
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	19.9	22.2	34.7	21.7	19.0	35.2	16.3	16.4	34.5	21.3	21.3
Incr Delay (d2), s/veh	38.1	0.2	1.8	94.8	0.4	0.2	245.5	0.1	0.3	3.2	2.6	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.7	6.3	8.7	5.3	1.2	14.3	2.8	2.8	1.5	9.4	10.0
LnGrp Delay(d),s/veh	71.9	20.1	24.0	129.5	22.1	19.2	280.8	16.4	16.6	37.7	23.8	26.2
LnGrp LOS	E	C	C	F	C	B	F	B	B	D	C	C
Approach Vol, veh/h		967			876			797			1519	
Approach Delay, s/veh		31.5			46.5			95.1			25.2	
Approach LOS		C			D			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	27.6	9.0	30.9	11.0	26.6	7.8	32.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+110), s	16.5	16.5	9.0	21.2	10.1	12.7	4.9	8.2				
Green Ext Time (p_c), s	0.0	7.1	0.0	5.6	0.0	7.9	0.0	14.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				44.5								
HCM 2010 LOS				D								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↖↗		↖	↖↗	↖
Traffic Volume (veh/h)	64	33	36	165	56	133	53	638	164	237	719	77
Future Volume (veh/h)	64	33	36	165	56	133	53	638	164	237	719	77
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	67	35	38	174	59	140	56	672	173	249	757	81
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	215	234	447	491	417	511	1833	471	499	2326	1041
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1179	818	888	1322	1863	1583	653	2788	717	649	3539	1583
Grp Volume(v), veh/h	67	0	73	174	59	140	56	426	419	249	757	81
Grp Sat Flow(s),veh/h/ln	1179	0	1706	1322	1863	1583	653	1770	1736	649	1770	1583
Q Serve(g_s), s	2.3	0.0	1.7	5.9	1.2	3.6	2.1	5.5	5.5	14.2	4.7	0.9
Cycle Q Clear(g_c), s	3.5	0.0	1.7	7.5	1.2	3.6	6.8	5.5	5.5	19.6	4.7	0.9
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	425	0	449	447	491	417	511	1163	1141	499	2326	1041
V/C Ratio(X)	0.16	0.00	0.16	0.39	0.12	0.34	0.11	0.37	0.37	0.50	0.33	0.08
Avail Cap(c_a), veh/h	700	0	847	755	925	786	549	1265	1241	536	2530	1132
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	0.0	14.3	17.2	14.1	15.0	5.2	3.9	3.9	8.3	3.8	3.1
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.6	0.1	0.5	0.1	0.2	0.2	0.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8	2.2	0.6	1.6	0.4	2.7	2.6	2.6	2.2	0.4
LnGrp Delay(d),s/veh	15.6	0.0	14.4	17.7	14.2	15.5	5.3	4.1	4.1	9.1	3.8	3.1
LnGrp LOS	B		B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		140			373			901			1087	
Approach Delay, s/veh		15.0			16.3			4.2			5.0	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.1		15.3		35.1		15.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		8.8		5.5		21.6		9.5				
Green Ext Time (p_c), s		16.1		1.9		9.5		1.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				6.9								
HCM 2010 LOS				A								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	170	201	102	274	16	87	367	99	28	507	68
Future Volume (veh/h)	6	170	201	102	274	16	87	367	99	28	507	68
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	179	212	107	288	17	92	386	104	29	534	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	495	421	205	623	529	186	1079	287	119	1105	149
Arrive On Green	0.05	0.27	0.27	0.12	0.33	0.33	0.10	0.39	0.39	0.07	0.35	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2765	737	1774	3136	422
Grp Volume(v), veh/h	6	179	212	107	288	17	92	245	245	29	301	305
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1733	1774	1770	1788
Q Serve(g_s), s	0.2	3.9	5.6	2.8	6.0	0.4	2.4	4.9	5.0	0.8	6.5	6.6
Cycle Q Clear(g_c), s	0.2	3.9	5.6	2.8	6.0	0.4	2.4	4.9	5.0	0.8	6.5	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		0.24
Lane Grp Cap(c), veh/h	83	495	421	205	623	529	186	690	676	119	624	630
V/C Ratio(X)	0.07	0.36	0.50	0.52	0.46	0.03	0.50	0.36	0.36	0.24	0.48	0.48
Avail Cap(c_a), veh/h	215	1130	961	215	1130	961	215	1074	1051	215	1074	1085
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	14.7	15.4	20.6	13.0	11.1	20.9	10.7	10.7	21.9	12.5	12.5
Incr Delay (d2), s/veh	0.4	0.4	0.9	2.1	0.5	0.0	2.0	0.3	0.3	1.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	2.5	1.5	3.1	0.2	1.3	2.4	2.4	0.4	3.3	3.3
LnGrp Delay(d),s/veh	22.9	15.2	16.3	22.7	13.5	11.1	22.9	11.0	11.0	22.9	13.1	13.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		397			412			582			635	
Approach Delay, s/veh		15.9			15.8			12.9			13.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	15.1	7.2	19.4	4.3	18.5	5.3	21.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	28.0	4.0	28.0	4.0	28.0				
Max Q Clear Time (g_c+1/4), s	4.0	7.6	4.4	8.6	2.2	8.0	2.8	7.0				
Green Ext Time (p_c), s	0.0	3.5	0.0	6.8	0.0	3.5	0.0	7.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.3								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	119	63	0	104	84	62	634	3	212	1326	175
Future Volume (veh/h)	71	119	63	0	104	84	62	634	3	212	1326	175
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	75	125	66	0	109	88	65	667	3	223	1396	184
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	558	475	4	312	265	156	2296	10	249	1742	779
Arrive On Green	0.09	0.30	0.30	0.00	0.17	0.17	0.09	0.44	0.44	0.14	0.49	0.49
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5225	23	1774	3539	1583
Grp Volume(v), veh/h	75	125	66	0	109	88	65	433	237	223	1396	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1859	1774	1770	1583
Q Serve(g_s), s	2.0	2.5	1.5	0.0	2.6	2.4	1.7	4.1	4.1	6.2	16.5	3.3
Cycle Q Clear(g_c), s	2.0	2.5	1.5	0.0	2.6	2.4	1.7	4.1	4.1	6.2	16.5	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	163	558	475	4	312	265	156	1490	817	249	1742	779
V/C Ratio(X)	0.46	0.22	0.14	0.00	0.35	0.33	0.42	0.29	0.29	0.89	0.80	0.24
Avail Cap(c_a), veh/h	214	1121	953	214	1121	953	214	1633	895	249	1775	794
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	13.1	12.8	0.0	18.3	18.3	21.5	9.0	9.0	21.1	10.6	7.3
Incr Delay (d2), s/veh	2.0	0.2	0.1	0.0	0.7	0.7	1.8	0.1	0.2	31.0	2.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.7	0.0	1.4	1.1	0.9	1.9	2.1	5.1	8.6	1.5
LnGrp Delay(d),s/veh	23.5	13.3	12.9	0.0	19.0	19.0	23.3	9.1	9.2	52.1	13.3	7.4
LnGrp LOS	C	B	B		B	B	C	A	A	D	B	A
Approach Vol, veh/h		266			197			735			1803	
Approach Delay, s/veh		16.1			19.0			10.4			17.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	16.9	6.4	26.5	6.6	10.4	9.0	23.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	23.0	4.0	28.0	5.0	22.0				
Max Q Clear Time (g_c+10), s	4.0	4.5	3.7	18.5	4.0	4.6	8.2	6.1				
Green Ext Time (p_c), s	0.0	1.8	0.0	4.0	0.0	1.8	0.0	12.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					15.7							
HCM 2010 LOS					B							



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗		↖	↖	↖	↖	↖ ↗	↖ ↗	
Traffic Volume (veh/h)	324	824	69	123	611	236	45	422	132	162	425	251
Future Volume (veh/h)	324	824	69	123	611	236	45	422	132	162	425	251
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	341	867	73	129	643	0	47	444	139	171	447	264
Adj No. of Lanes	1	3	0	1	3	1	1	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	1667	140	212	1545	481	115	1092	489	358	748	439
Arrive On Green	0.16	0.35	0.35	0.12	0.30	0.00	0.06	0.31	0.31	0.10	0.35	0.35
Sat Flow, veh/h	1774	4781	401	1774	5085	1583	1774	3539	1583	3442	2149	1260
Grp Volume(v), veh/h	341	614	326	129	643	0	47	444	139	171	367	344
Grp Sat Flow(s),veh/h/ln	1774	1695	1792	1774	1695	1583	1774	1770	1583	1721	1770	1640
Q Serve(g_s), s	11.0	9.7	9.7	4.6	6.8	0.0	1.7	6.6	4.5	3.1	11.5	11.6
Cycle Q Clear(g_c), s	11.0	9.7	9.7	4.6	6.8	0.0	1.7	6.6	4.5	3.1	11.5	11.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	291	1182	625	212	1545	481	115	1092	489	358	616	571
V/C Ratio(X)	1.17	0.52	0.52	0.61	0.42	0.00	0.41	0.41	0.28	0.48	0.60	0.60
Avail Cap(c_a), veh/h	291	1518	802	212	2049	638	159	1637	732	411	871	808
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	17.4	17.4	28.0	18.6	0.0	30.1	18.3	17.6	28.3	18.0	18.0
Incr Delay (d2), s/veh	107.3	0.4	0.7	5.0	0.2	0.0	2.3	0.2	0.3	1.0	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	4.6	4.9	2.6	3.2	0.0	0.9	3.2	2.0	1.5	5.7	5.4
LnGrp Delay(d),s/veh	135.3	17.7	18.1	33.0	18.8	0.0	32.4	18.6	17.9	29.3	18.9	19.0
LnGrp LOS	F	B	B	C	B		C	B	B	C	B	B
Approach Vol, veh/h		1281			772			630			882	
Approach Delay, s/veh		49.1			21.1			19.4			21.0	
Approach LOS		D			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	25.4	6.3	25.3	13.0	22.4	9.0	22.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	31.0	9.0	25.0	6.0	29.0				
Max Q Clear Time (g_c+10), s	4.0	11.7	3.7	13.6	13.0	8.8	5.1	8.6				
Green Ext Time (p_c), s	0.0	9.6	0.0	7.7	0.0	9.6	0.0	8.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				30.8								
HCM 2010 LOS				C								

HCM Signalized Intersection Capacity Analysis  
30: SR57 SB Ramp & Orangethorpe

2040 Proposed GP AM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1007	2	13	901	507	3	9	36	319	0	167
Future Volume (vph)	150	1007	2	13	901	507	3	9	36	319	0	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	9	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.99	
Satd. Flow (prot)	3433	5084		1770	5085	1583		1717	1425	1681	1558	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.99	
Satd. Flow (perm)	3433	5084		1770	5085	1583		1717	1425	1681	1558	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	1060	2	14	948	534	3	9	38	336	0	176
RTOR Reduction (vph)	0	0	0	0	0	253	0	0	36	0	123	0
Lane Group Flow (vph)	158	1062	0	14	948	281	0	12	2	265	124	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	3.0	26.0		0.6	23.6	23.6		2.0	2.0	16.6	16.6	
Effective Green, g (s)	5.0	28.0		2.6	25.6	25.6		4.0	4.0	18.6	18.6	
Actuated g/C Ratio	0.08	0.46		0.04	0.42	0.42		0.07	0.07	0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	280	2326		75	2127	662		112	93	510	473	
v/s Ratio Prot	c0.05	c0.21		0.01	0.19			c0.01		c0.16	0.08	
v/s Ratio Perm						0.18			0.00			
v/c Ratio	0.56	0.46		0.19	0.45	0.42		0.11	0.03	0.52	0.26	
Uniform Delay, d1	27.1	11.4		28.3	12.7	12.6		26.9	26.8	17.6	16.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.1		1.2	0.1	0.4		0.4	0.1	0.9	0.3	
Delay (s)	29.6	11.5		29.5	12.9	13.0		27.3	26.9	18.5	16.4	
Level of Service	C	B		C	B	B		C	C	B	B	
Approach Delay (s)		13.9			13.1			27.0			17.5	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe
























2040 Proposed GP AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑			↑↑↑		↖↗		↗			
Traffic Volume (veh/h)	174	1189	0	0	1156	250	266	0	587	0	0	0
Future Volume (veh/h)	174	1189	0	0	1156	250	266	0	587	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	183	1252	0	0	1217	263	280	0	618			
Adj No. of Lanes	2	3	0	0	3	0	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	331	2440	0	0	1473	318	1570	0	722			
Arrive On Green	0.10	0.48	0.00	0.00	0.35	0.35	0.46	0.00	0.46			
Sat Flow, veh/h	3442	5253	0	0	4356	905	3442	0	1583			
Grp Volume(v), veh/h	183	1252	0	0	985	495	280	0	618			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1703	1721	0	1583			
Q Serve(g_s), s	3.2	10.6	0.0	0.0	16.6	16.6	3.0	0.0	21.7			
Cycle Q Clear(g_c), s	3.2	10.6	0.0	0.0	16.6	16.6	3.0	0.0	21.7			
Prop In Lane	1.00		0.00	0.00		0.53	1.00		1.00			
Lane Grp Cap(c), veh/h	331	2440	0	0	1192	599	1570	0	722			
V/C Ratio(X)	0.55	0.51	0.00	0.00	0.83	0.83	0.18	0.00	0.86			
Avail Cap(c_a), veh/h	331	2444	0	0	1195	600	1985	0	913			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	26.9	11.2	0.0	0.0	18.5	18.5	10.0	0.0	15.1			
Incr Delay (d2), s/veh	2.0	0.2	0.0	0.0	4.9	9.3	0.1	0.0	6.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.6	4.9	0.0	0.0	8.5	9.2	1.4	0.0	10.8			
LnGrp Delay(d),s/veh	28.9	11.4	0.0	0.0	23.4	27.8	10.1	0.0	21.8			
LnGrp LOS	C	B			C	C	B		C			
Approach Vol, veh/h		1435			1480			898				
Approach Delay, s/veh		13.6			24.9			18.1				
Approach LOS		B			C			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.0			8.0	24.0		30.5				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		12.6			5.2	18.6		23.7				
Green Ext Time (p_c), s		13.6			0.0	1.4		2.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					19.0							
HCM 2010 LOS					B							



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (veh/h)	244	763	491	81	852	54	181	336	59	66	514	228
Future Volume (veh/h)	244	763	491	81	852	54	181	336	59	66	514	228
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	257	803	517	85	897	57	191	354	62	69	541	240
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1162	543	257	1622	103	253	1179	205	137	777	344
Arrive On Green	0.09	0.34	0.34	0.07	0.33	0.33	0.14	0.39	0.39	0.08	0.33	0.33
Sat Flow, veh/h	3442	3390	1583	3442	4888	310	1774	3017	523	1774	2389	1057
Grp Volume(v), veh/h	257	803	517	85	621	333	191	206	210	69	400	381
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1808	1774	1770	1770	1774	1770	1676
Q Serve(g_s), s	5.2	14.3	22.3	1.6	10.5	10.5	7.2	5.6	5.7	2.6	13.8	13.9
Cycle Q Clear(g_c), s	5.2	14.3	22.3	1.6	10.5	10.5	7.2	5.6	5.7	2.6	13.8	13.9
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.30	1.00		0.63
Lane Grp Cap(c), veh/h	295	1162	543	257	1125	600	253	692	692	137	576	545
V/C Ratio(X)	0.87	0.69	0.95	0.33	0.55	0.55	0.75	0.30	0.30	0.50	0.70	0.70
Avail Cap(c_a), veh/h	295	1162	543	295	1162	620	253	784	784	152	682	646
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	19.8	22.4	30.7	19.1	19.1	28.8	14.7	14.7	31.0	20.6	20.6
Incr Delay (d2), s/veh	23.5	1.8	27.1	0.7	0.5	1.0	12.0	0.2	0.2	2.8	2.5	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	7.0	13.7	0.8	5.0	5.4	4.4	2.8	2.8	1.4	7.1	6.7
LnGrp Delay(d),s/veh	55.1	21.6	49.6	31.5	19.7	20.2	40.9	14.9	15.0	33.9	23.1	23.3
LnGrp LOS	E	C	D	C	B	C	D	B	B	C	C	C
Approach Vol, veh/h	1577			1039			607			850		
Approach Delay, s/veh	36.2			20.8			23.1			24.0		
Approach LOS	D			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	26.0	12.0	24.8	8.0	25.2	7.4	29.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+1), s	4.0	24.3	9.2	15.9	7.2	12.5	4.6	7.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	4.9	0.0	8.0	0.0	8.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay	27.8											
HCM 2010 LOS	C											

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	469	335	155	472	48	169	507	72	47	1152	233
Future Volume (veh/h)	161	469	335	155	472	48	169	507	72	47	1152	233
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	169	494	353	163	497	51	178	534	76	49	1213	245
Adj No. of Lanes	1	2	1	1	3	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1048	469	234	1598	162	215	1511	676	101	1284	574
Arrive On Green	0.09	0.30	0.30	0.13	0.34	0.34	0.12	0.43	0.43	0.06	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	4694	476	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	169	494	353	163	357	191	178	534	76	49	1213	245
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1779	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.0	10.4	18.4	8.0	7.1	7.2	8.9	9.3	2.6	2.4	30.2	10.6
Cycle Q Clear(g_c), s	8.0	10.4	18.4	8.0	7.1	7.2	8.9	9.3	2.6	2.4	30.2	10.6
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	1048	469	234	1154	606	215	1511	676	101	1284	574
V/C Ratio(X)	1.08	0.47	0.75	0.70	0.31	0.31	0.83	0.35	0.11	0.49	0.94	0.43
Avail Cap(c_a), veh/h	156	1167	522	351	1491	782	215	1511	676	156	1284	574
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	26.2	29.0	37.7	22.1	22.2	39.1	17.6	15.7	41.6	28.1	21.9
Incr Delay (d2), s/veh	96.1	0.3	5.5	3.7	0.2	0.3	23.1	0.1	0.1	3.6	14.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	5.1	8.8	4.1	3.3	3.6	5.7	4.6	1.2	1.3	17.2	4.7
LnGrp Delay(d),s/veh	137.5	26.5	34.5	41.4	22.3	22.5	62.1	17.7	15.8	45.2	42.1	22.4
LnGrp LOS	F	C	C	D	C	C	E	B	B	D	D	C
Approach Vol, veh/h		1016			711			788			1507	
Approach Delay, s/veh		47.7			26.7			27.6			39.0	
Approach LOS		D			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	29.0	13.0	35.0	10.0	33.0	7.2	40.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	28.0	9.0	31.0	6.0	38.0	6.0	34.0				
Max Q Clear Time (g_c+I1), s	10.0	20.4	10.9	32.2	10.0	9.2	4.4	11.3				
Green Ext Time (p_c), s	0.2	4.6	0.0	0.0	0.0	9.7	0.0	15.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			36.8									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis  
34: Miller/Crowther & Orangethorpe

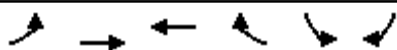
2040 Proposed GP AM  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↖↖		↖	↖↖↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	1	435	162	111	526	103	28	44	34	48	266	3
Future Volume (vph)	1	435	162	111	526	103	28	44	34	48	266	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	9	12	12	12	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Fr <sub>t</sub>	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4878		1770	4746	1425	1681	1765	1583	1681	1768	1583
Fl <sub>t</sub> Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	4878		1770	4746	1425	1681	1765	1583	1681	1768	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	1	500	186	128	605	118	32	51	39	55	306	3
RTOR Reduction (vph)	0	79	0	0	0	71	0	0	36	0	0	2
Lane Group Flow (vph)	1	607	0	128	605	47	29	54	3	49	312	1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		7	7	
Permitted Phases						6			3			7
Actuated Green, G (s)	0.8	16.5		5.0	20.7	20.7	2.9	2.9	2.9	16.0	16.0	16.0
Effective Green, g (s)	2.8	18.5		7.0	22.7	22.7	4.9	4.9	4.9	18.0	18.0	18.0
Actuated g/C Ratio	0.05	0.33		0.12	0.40	0.40	0.09	0.09	0.09	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Lane Grp Cap (vph)	87	1600		219	1910	573	146	153	137	536	564	505
v/s Ratio Prot	0.00	c0.12		c0.07	0.13		0.02	c0.03		0.03	c0.18	
v/s Ratio Perm						0.03			0.00			0.00
v/c Ratio	0.01	0.38		0.58	0.32	0.08	0.20	0.35	0.02	0.09	0.55	0.00
Uniform Delay, d <sub>1</sub>	25.5	14.5		23.3	11.5	10.4	23.9	24.3	23.6	13.5	15.9	13.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d <sub>2</sub>	0.1	0.2		3.9	0.1	0.1	0.7	1.4	0.1	0.1	1.2	0.0
Delay (s)	25.5	14.7		27.3	11.6	10.5	24.6	25.7	23.6	13.5	17.1	13.1
Level of Service	C	B		C	B	B	C	C	C	B	B	B
Approach Delay (s)		14.7			13.8			24.8			16.5	
Approach LOS		B			B			C			B	

Intersection Summary
















HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖	↗↗↗	↖↖↖		↖↖	↗		
Traffic Volume (veh/h)	33	484	634	373	456	106		
Future Volume (veh/h)	33	484	634	373	456	106		
Number	5	2	6	16	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	35	509	667	393	480	112		
Adj No. of Lanes	1	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	143	3232	1716	802	919	423		
Arrive On Green	0.08	0.64	0.51	0.51	0.27	0.27		
Sat Flow, veh/h	1774	5253	3558	1583	3442	1583		
Grp Volume(v), veh/h	35	509	667	393	480	112		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1721	1583		
Q Serve(g_s), s	0.8	1.7	5.0	6.7	4.9	2.3		
Cycle Q Clear(g_c), s	0.8	1.7	5.0	6.7	4.9	2.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	143	3232	1716	802	919	423		
V/C Ratio(X)	0.24	0.16	0.39	0.49	0.52	0.26		
Avail Cap(c_a), veh/h	259	4453	2309	1078	2511	1155		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.7	3.0	6.2	6.7	12.8	11.9		
Incr Delay (d2), s/veh	0.9	0.0	0.1	0.5	0.5	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.4	0.8	2.4	2.9	2.3	1.0		
LnGrp Delay(d),s/veh	18.6	3.1	6.4	7.1	13.3	12.2		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		544	1060		592			
Approach Delay, s/veh		4.1	6.7		13.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		28.1			5.3	22.8		13.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		34.0			4.0	26.0		28.0
Max Q Clear Time (g_c+11), s		3.7			2.8	8.7		6.9
Green Ext Time (p_c), s		13.8			0.0	10.1		2.1
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay				7.7				
HCM 2010 LOS				A				

HCM Signalized Intersection Capacity Analysis  
36: Del Cerro Drive & Rose

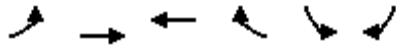
2040 Proposed GP AM  
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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	205	98	554	53	74	1810
Future Volume (vph)	205	98	554	53	74	1810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.99	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3426	1441	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3426	1441	3539	1583	1770	3539
Peak-hour factor, PHF	0.92	0.95	0.92	0.92	0.95	0.92
Adj. Flow (vph)	223	103	602	58	78	1967
RTOR Reduction (vph)	5	81	0	18	0	0
Lane Group Flow (vph)	228	12	602	40	78	1967
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	5.1	5.1	37.8	37.8	2.2	44.0
Effective Green, g (s)	7.1	7.1	39.8	39.8	4.2	46.0
Actuated g/C Ratio	0.12	0.12	0.70	0.70	0.07	0.81
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	426	179	2466	1103	130	2851
v/s Ratio Prot	c0.07		0.17		0.04	c0.56
v/s Ratio Perm		0.01		0.03		
v/c Ratio	0.53	0.06	0.24	0.04	0.60	0.69
Uniform Delay, d1	23.5	22.1	3.2	2.7	25.6	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	0.1	0.0	7.3	0.7
Delay (s)	24.7	22.2	3.2	2.7	32.9	3.1
Level of Service	C	C	A	A	C	A
Approach Delay (s)	24.0		3.2			4.3
Approach LOS	C		A			A

Intersection Summary

HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖ ↗	↑ ↑ ↑	↑ ↑ ↑		↖	↗		
Traffic Volume (veh/h)	118	523	900	170	67	80		
Future Volume (veh/h)	118	523	900	170	67	80		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	128	568	978	185	73	87		
Adj No. of Lanes	2	3	3	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	453	3734	2362	446	283	444		
Arrive On Green	0.13	0.73	0.55	0.55	0.16	0.16		
Sat Flow, veh/h	3442	5253	4466	811	1774	2787		
Grp Volume(v), veh/h	128	568	771	392	73	87		
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1720	1774	1393		
Q Serve(g_s), s	1.3	1.3	5.0	5.0	1.4	1.0		
Cycle Q Clear(g_c), s	1.3	1.3	5.0	5.0	1.4	1.0		
Prop In Lane	1.00			0.47	1.00	1.00		
Lane Grp Cap(c), veh/h	453	3734	1863	945	283	444		
V/C Ratio(X)	0.28	0.15	0.41	0.42	0.26	0.20		
Avail Cap(c_a), veh/h	640	5001	2523	1280	1839	2889		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.7	1.5	4.9	4.9	13.9	13.7		
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.3	0.5	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	0.6	2.3	2.4	0.7	0.8		
LnGrp Delay(d),s/veh	15.1	1.5	5.1	5.2	14.3	13.9		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		696	1163		160			
Approach Delay, s/veh		4.0	5.1		14.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				29.6		8.0	7.0	22.7
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				35.0		37.0	5.0	26.0
Max Q Clear Time (g_c+I1), s				3.3		3.4	3.3	7.0
Green Ext Time (p_c), s				15.7		0.5	0.1	11.7
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			5.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary  
 38: Jefferson & Orangethorpe

2040 Proposed GP AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	543	42	38	925	61	38	58	33	80	205	196
Future Volume (veh/h)	26	543	42	38	925	61	38	58	33	80	205	196
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	572	44	40	974	64	40	61	35	84	216	206
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	1504	115	131	1630	700	131	483	257	175	448	381
Arrive On Green	0.07	0.45	0.45	0.07	0.46	0.46	0.07	0.22	0.22	0.10	0.24	0.24
Sat Flow, veh/h	1774	3331	256	1774	3539	1520	1774	2234	1189	1774	1863	1583
Grp Volume(v), veh/h	27	303	313	40	974	64	40	47	49	84	216	206
Grp Sat Flow(s),veh/h/ln	1774	1770	1818	1774	1770	1520	1774	1770	1653	1774	1863	1583
Q Serve(g_s), s	0.7	5.7	5.7	1.1	10.2	1.2	1.1	1.1	1.2	2.2	5.0	5.7
Cycle Q Clear(g_c), s	0.7	5.7	5.7	1.1	10.2	1.2	1.1	1.1	1.2	2.2	5.0	5.7
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	115	799	820	131	1630	700	131	383	357	175	448	381
V/C Ratio(X)	0.23	0.38	0.38	0.30	0.60	0.09	0.30	0.12	0.14	0.48	0.48	0.54
Avail Cap(c_a), veh/h	213	991	1018	213	1982	851	213	956	893	213	1006	855
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	9.1	9.1	21.9	10.0	7.6	21.9	15.8	15.8	21.3	16.3	16.6
Incr Delay (d2), s/veh	1.0	0.3	0.3	1.3	0.4	0.1	1.3	0.1	0.2	2.0	0.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	2.9	0.6	5.0	0.5	0.6	0.5	0.6	1.2	2.6	2.6
LnGrp Delay(d),s/veh	23.2	9.4	9.4	23.2	10.4	7.7	23.2	15.9	16.0	23.4	17.1	17.8
LnGrp LOS	C	A	A	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		643			1078			136			506	
Approach Delay, s/veh		10.0			10.7			18.1			18.4	
Approach LOS		A			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	24.6	5.7	14.0	5.3	25.0	6.9	12.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	26.0	4.0	25.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+11), s	7.7	7.7	3.1	7.7	2.7	12.2	4.2	3.2				
Green Ext Time (p_c), s	0.0	10.7	0.0	2.3	0.0	8.8	0.0	2.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.6								
HCM 2010 LOS				B								



HCM 2010 Signalized Intersection Summary  
 39: Van Buren & Orangethorpe

2040 Proposed GP AM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	571	45	39	814	38	42	57	33	56	272	169
Future Volume (veh/h)	40	571	45	39	814	38	42	57	33	56	272	169
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	42	571	47	41	857	40	44	60	35	59	286	178
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	1380	113	134	1473	632	137	484	411	152	499	425
Arrive On Green	0.08	0.42	0.42	0.08	0.42	0.42	0.08	0.26	0.26	0.09	0.27	0.27
Sat Flow, veh/h	1774	3312	272	1774	3539	1520	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	42	305	313	41	857	40	44	60	35	59	286	178
Grp Sat Flow(s),veh/h/ln	1774	1770	1815	1774	1770	1520	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	6.0	6.0	1.1	9.2	0.8	1.2	1.2	0.8	1.5	6.5	4.6
Cycle Q Clear(g_c), s	1.1	6.0	6.0	1.1	9.2	0.8	1.2	1.2	0.8	1.5	6.5	4.6
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	737	756	134	1473	632	137	484	411	152	499	425
V/C Ratio(X)	0.31	0.41	0.41	0.31	0.58	0.06	0.32	0.12	0.09	0.39	0.57	0.42
Avail Cap(c_a), veh/h	216	790	810	324	1796	771	216	1134	964	216	1134	964
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	10.1	10.1	21.6	11.1	8.6	21.5	13.9	13.8	21.3	15.6	14.9
Incr Delay (d2), s/veh	1.3	0.4	0.4	1.3	0.4	0.0	1.3	0.1	0.1	1.6	1.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.0	3.0	0.6	4.5	0.3	0.6	0.6	0.4	0.8	3.5	2.1
LnGrp Delay(d),s/veh	22.8	10.5	10.5	22.8	11.4	8.7	22.8	14.1	13.9	22.9	16.6	15.5
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		660			938			139			523	
Approach Delay, s/veh		11.3			11.8			16.8			17.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	22.5	5.8	15.2	5.7	22.5	6.2	14.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	4.0	28.0	4.0	23.0	4.0	28.0					
Max Q Clear Time (g_c+11), s	8.0	3.2	8.5	3.1	11.2	3.5	3.2					
Green Ext Time (p_c), s	0.0	7.4	0.0	2.7	0.0	7.3	0.0	2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.2								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	506	96	124	818	73	23	137	53	75	626	42
Future Volume (veh/h)	60	506	96	124	818	73	23	137	53	75	626	42
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	63	533	101	131	861	77	24	144	56	79	659	44
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	1276	571	191	1372	589	103	749	280	162	1110	74
Arrive On Green	0.08	0.36	0.36	0.11	0.39	0.39	0.06	0.30	0.30	0.09	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	1774	2523	943	1774	3368	225
Grp Volume(v), veh/h	63	533	101	131	861	77	24	99	101	79	346	357
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	1774	1770	1696	1774	1770	1823
Q Serve(g_s), s	1.9	6.3	2.4	4.0	11.0	1.8	0.7	2.3	2.5	2.4	9.1	9.1
Cycle Q Clear(g_c), s	1.9	6.3	2.4	4.0	11.0	1.8	0.7	2.3	2.5	2.4	9.1	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.56	1.00		0.12
Lane Grp Cap(c), veh/h	143	1276	571	191	1372	589	103	525	503	162	583	601
V/C Ratio(X)	0.44	0.42	0.18	0.68	0.63	0.13	0.23	0.19	0.20	0.49	0.59	0.59
Avail Cap(c_a), veh/h	191	1590	711	191	1590	683	191	954	915	191	954	983
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	13.4	12.2	23.9	13.8	11.0	25.0	14.6	14.6	24.1	15.5	15.5
Incr Delay (d2), s/veh	2.1	0.2	0.1	9.7	0.6	0.1	1.1	0.2	0.2	2.3	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.1	1.1	2.4	5.4	0.8	0.4	1.2	1.2	1.2	4.6	4.7
LnGrp Delay(d),s/veh	26.5	13.6	12.3	33.6	14.4	11.1	26.1	14.7	14.8	26.3	16.5	16.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		697			1069			224			782	
Approach Delay, s/veh		14.6			16.5			16.0			17.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	22.1	5.2	20.3	6.5	23.6	7.1	18.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+1/3), s	4.0	8.3	2.7	11.1	3.9	13.0	4.4	4.5				
Green Ext Time (p_c), s	0.0	8.7	0.0	5.3	0.0	6.6	0.0	5.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					16.3							
HCM 2010 LOS					B							

**Intersection**

Intersection Delay, s/veh 12.3

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑		↵	↑↑			↵↵			↵↵	
Traffic Vol, veh/h	30	190	73	25	216	18	30	64	17	37	273	42
Future Vol, veh/h	30	190	73	25	216	18	30	64	17	37	273	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	200	77	26	227	19	32	67	18	39	287	44
Number of Lanes	1	2	0	1	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay	11.9	12.1	11.3	13
HCM LOS	B	B	B	B
























Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	
Vol Left, %		48%	0%	100%	0%	0%	100%	0%	0%	21%	0%
Vol Thru, %		52%	65%	0%	100%	46%	0%	100%	80%	79%	76%
Vol Right, %		0%	35%	0%	0%	54%	0%	0%	20%	0%	24%
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane		62	49	30	127	136	25	144	90	174	179
LT Vol		30	0	30	0	0	25	0	0	37	0
Through Vol		32	32	0	127	63	0	144	72	137	137
RT Vol		0	17	0	0	73	0	0	18	0	42
Lane Flow Rate		65	52	32	133	144	26	152	95	183	188
Geometry Grp		8	8	8	8	8	8	8	8	8	8
Degree of Util (X)		0.14	0.103	0.066	0.261	0.266	0.056	0.3	0.184	0.346	0.342
Departure Headway (Hd)		7.697	7.208	7.566	7.056	6.674	7.634	7.124	6.981	6.948	6.675
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap		467	499	476	512	541	471	506	516	521	543
Service Time		5.422	4.932	5.277	4.767	4.385	5.344	4.834	4.692	4.648	4.375
HCM Lane V/C Ratio		0.139	0.104	0.067	0.26	0.266	0.055	0.3	0.184	0.351	0.346
HCM Control Delay		11.7	10.8	10.8	12.2	11.8	10.8	12.9	11.3	13.3	12.8
HCM Lane LOS		B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q		0.5	0.3	0.2	1	1.1	0.2	1.3	0.7	1.5	1.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	149	86	4	144	33	37	169	30	61	615	88
Future Volume (veh/h)	27	149	86	4	144	33	37	169	30	61	615	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	28	157	91	4	152	35	39	178	32	64	647	93
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	483	266	346	630	141	602	2064	364	948	2132	306
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1192	2205	1213	1127	2873	645	716	3008	531	1167	3108	446
Grp Volume(v), veh/h	28	124	124	4	92	95	39	103	107	64	368	372
Grp Sat Flow(s),veh/h/ln	1192	1770	1649	1127	1770	1749	716	1770	1769	1167	1770	1784
Q Serve(g_s), s	0.8	2.5	2.7	0.1	1.8	1.9	1.0	0.8	0.9	0.8	3.5	3.5
Cycle Q Clear(g_c), s	2.7	2.5	2.7	2.8	1.8	1.9	4.5	0.8	0.9	1.7	3.5	3.5
Prop In Lane	1.00		0.74	1.00		0.37	1.00		0.30	1.00		0.25
Lane Grp Cap(c), veh/h	378	388	361	346	388	383	602	1214	1214	948	1214	1224
V/C Ratio(X)	0.07	0.32	0.34	0.01	0.24	0.25	0.06	0.09	0.09	0.07	0.30	0.30
Avail Cap(c_a), veh/h	878	1130	1053	819	1130	1117	602	1214	1214	948	1214	1224
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	13.9	13.9	15.1	13.6	13.6	3.5	2.2	2.2	2.5	2.6	2.6
Incr Delay (d2), s/veh	0.1	0.5	0.6	0.0	0.3	0.3	0.2	0.1	0.1	0.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.3	1.3	0.0	0.9	0.9	0.2	0.4	0.5	0.3	1.9	1.9
LnGrp Delay(d),s/veh	14.8	14.3	14.5	15.1	13.9	14.0	3.7	2.3	2.4	2.6	3.3	3.3
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		276			191			249			804	
Approach Delay, s/veh		14.5			14.0			2.6			3.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		11.3		31.0		11.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		6.5		4.7		5.5		4.8				
Green Ext Time (p_c), s		6.4		2.5		6.5		2.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				6.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
1: Kraemer & Golden

2040 Proposed GP PM  
07/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	14	44	97	14	105	42	747	121	128	1078	20
Future Volume (veh/h)	25	14	44	97	14	105	42	747	121	128	1078	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	26	15	46	102	15	111	44	786	127	135	1135	21
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	323	152	324	454	398	338	448	2405	1076	551	2405	1033
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	777	713	1520	1336	1863	1583	484	3539	1583	609	3539	1520
Grp Volume(v), veh/h	41	0	46	102	15	111	44	786	127	135	1135	21
Grp Sat Flow(s),veh/h/ln	1490	0	1520	1336	1863	1583	484	1770	1583	609	1770	1520
Q Serve(g_s), s	0.0	0.0	0.9	2.5	0.2	2.2	1.8	3.4	1.0	4.4	5.7	0.2
Cycle Q Clear(g_c), s	0.7	0.0	0.9	3.1	0.2	2.2	7.4	3.4	1.0	7.8	5.7	0.2
Prop In Lane	0.63		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	476	0	324	454	398	338	448	2405	1076	551	2405	1033
V/C Ratio(X)	0.09	0.00	0.14	0.22	0.04	0.33	0.10	0.33	0.12	0.25	0.47	0.02
Avail Cap(c_a), veh/h	1203	0	1098	1134	1346	1144	495	2747	1229	609	2747	1180
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	11.9	13.1	11.7	12.4	4.6	2.5	2.1	4.1	2.8	1.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.2	0.0	0.6	0.1	0.1	0.0	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.4	0.9	0.1	1.0	0.2	1.7	0.4	0.7	2.7	0.1
LnGrp Delay(d),s/veh	11.9	0.0	12.1	13.3	11.7	13.0	4.7	2.5	2.1	4.3	3.0	2.0
LnGrp LOS	B		B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		87			228			957			1291	
Approach Delay, s/veh		12.0			13.1			2.6			3.1	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.4		10.0		27.4		10.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		9.4		2.9		9.8		5.1				
Green Ext Time (p_c), s		13.8		1.1		13.6		1.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			4.1									
HCM 2010 LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	73	66	34	86	54	51	355	48	44	390	42
Future Volume (veh/h)	46	73	66	34	86	54	51	355	48	44	390	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	77	69	36	91	57	54	374	51	46	411	44
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	622	537	456	629	537	456	750	1689	229	767	1740	185
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1235	1863	1583	1237	1863	1583	932	3133	424	958	3228	344
Grp Volume(v), veh/h	48	77	69	36	91	57	54	210	215	46	224	231
Grp Sat Flow(s),veh/h/ln	1235	1863	1583	1237	1863	1583	932	1770	1788	958	1770	1802
Q Serve(g_s), s	0.7	0.7	0.8	0.5	0.8	0.6	0.8	1.4	1.5	0.6	1.5	1.6
Cycle Q Clear(g_c), s	1.5	0.7	0.8	1.2	0.8	0.6	2.3	1.4	1.5	2.1	1.5	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.19
Lane Grp Cap(c), veh/h	622	537	456	629	537	456	750	954	964	767	954	971
V/C Ratio(X)	0.08	0.14	0.15	0.06	0.17	0.12	0.07	0.22	0.22	0.06	0.24	0.24
Avail Cap(c_a), veh/h	1706	2172	1846	1715	2172	1846	1416	2216	2239	1451	2216	2257
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.7	6.1	6.1	6.6	6.2	6.1	3.4	2.8	2.8	3.3	2.8	2.8
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	0.3	0.2	0.5	0.3	0.2	0.7	0.7	0.2	0.8	0.8
LnGrp Delay(d),s/veh	6.8	6.2	6.3	6.6	6.3	6.2	3.5	2.9	2.9	3.4	2.9	2.9
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		194			184			479			501	
Approach Delay, s/veh		6.4			6.3			3.0			3.0	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.5		8.7		14.5		8.7				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		4.3		3.5		4.1		3.2				
Green Ext Time (p_c), s		6.2		1.6		6.2		1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				3.9								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial

2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	69	1574	267	163	1447	769	322	617	121	806	417	50
Future Volume (veh/h)	69	1574	267	163	1447	769	322	617	121	806	417	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	1657	281	172	1523	809	339	649	127	848	439	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1556	262	299	1883	586	339	963	431	713	1347	0
Arrive On Green	0.07	0.35	0.35	0.09	0.37	0.37	0.10	0.27	0.27	0.21	0.38	0.00
Sat Flow, veh/h	1774	4383	739	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	73	1279	659	172	1523	809	339	649	127	848	439	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1732	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.6	6.4	21.0	8.9	0.0
Cycle Q Clear(g_c), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.6	6.4	21.0	8.9	0.0
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	127	1203	615	299	1883	586	339	963	431	713	1347	0
V/C Ratio(X)	0.57	1.06	1.07	0.57	0.81	1.38	1.00	0.67	0.29	1.19	0.33	0.00
Avail Cap(c_a), veh/h	140	1203	615	305	1883	586	339	1256	562	713	1640	0
HCM 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
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	32.7	32.7	44.5	28.7	31.9	45.7	32.9	29.2	40.2	22.2	0.0
Incr Delay (d2), s/veh	4.7	44.4	56.8	2.5	2.7	181.4	48.5	0.9	0.4	99.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	24.1	26.8	2.4	13.2	45.8	7.0	8.2	2.9	19.7	4.4	0.0
LnGrp Delay(d),s/veh	50.2	77.2	89.5	47.0	31.4	213.3	94.2	33.8	29.6	139.3	22.4	0.0
LnGrp LOS	D	F	F	D	C	F	F	C	C	F	C	
Approach Vol, veh/h		2011			2504			1115			1287	
Approach Delay, s/veh		80.2			91.3			51.7			99.4	
Approach LOS		F			F			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.8	38.0	12.0	40.6	9.3	39.6	23.0	29.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	0.8	34.0	8.0	45.0	6.0	35.0	19.0	34.0				
Max Q Clear Time (g_c+10), s	0.8	38.0	12.0	10.9	6.0	39.6	23.0	18.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.7	0.0	0.0	0.0	7.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				83.2								
HCM 2010 LOS				F								

HCM 2010 Signalized Intersection Summary  
4: Placentia & Bastanchury

2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	959	163	292	963	134	233	376	314	193	423	63
Future Volume (veh/h)	51	959	163	292	963	134	233	376	314	193	423	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	1009	172	307	1014	141	245	396	331	203	445	66
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1231	551	282	1565	700	405	567	470	320	954	141
Arrive On Green	0.06	0.35	0.35	0.16	0.44	0.44	0.08	0.31	0.31	0.08	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1840	1524	1774	3095	457
Grp Volume(v), veh/h	54	1009	172	307	1014	141	245	381	346	203	253	258
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1594	1774	1770	1782
Q Serve(g_s), s	2.2	19.7	6.0	12.0	16.9	4.1	6.0	14.3	14.5	6.0	8.7	8.8
Cycle Q Clear(g_c), s	2.2	19.7	6.0	12.0	16.9	4.1	6.0	14.3	14.5	6.0	8.7	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.96	1.00		0.26
Lane Grp Cap(c), veh/h	114	1231	551	282	1565	700	405	545	491	320	545	549
V/C Ratio(X)	0.47	0.82	0.31	1.09	0.65	0.20	0.60	0.70	0.70	0.63	0.46	0.47
Avail Cap(c_a), veh/h	141	1264	566	282	1565	700	405	632	569	320	632	637
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	22.5	18.0	31.8	16.5	12.9	18.7	23.0	23.1	17.9	21.1	21.1
Incr Delay (d2), s/veh	3.0	4.3	0.3	79.8	0.9	0.1	2.5	2.8	3.3	4.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	10.3	2.6	12.0	8.4	1.8	1.9	7.4	6.8	3.2	4.3	4.4
LnGrp Delay(d),s/veh	37.1	26.8	18.4	111.6	17.4	13.0	21.2	25.9	26.4	22.0	21.7	21.8
LnGrp LOS	D	C	B	F	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1235			1462			972			714	
Approach Delay, s/veh		26.1			36.8			24.9			21.8	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	28.3	8.0	25.3	6.9	35.4	8.0	25.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	25.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	11.4	21.7	8.0	10.8	4.2	18.9	8.0	16.5				
Green Ext Time (p_c), s	0.0	2.6	0.0	6.8	0.0	10.0	0.0	4.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				28.7								
HCM 2010 LOS				C								



HCM 2010 Signalized Intersection Summary  
5: Kraemer & Bastanchury

2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Traffic Volume (veh/h)	212	1032	247	95	860	94	296	757	91	68	727	321
Future Volume (veh/h)	212	1032	247	95	860	94	296	757	91	68	727	321
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	223	1086	260	100	905	99	312	797	96	72	765	338
Adj No. of Lanes	2	2	0	1	3	0	2	2	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	1067	254	170	1681	183	258	1123	135	133	1223	536
Arrive On Green	0.11	0.38	0.38	0.10	0.36	0.36	0.07	0.35	0.35	0.07	0.35	0.35
Sat Flow, veh/h	3442	2838	675	1774	4656	508	3442	3182	383	1774	3466	1519
Grp Volume(v), veh/h	223	675	671	100	658	346	312	443	450	72	748	355
Grp Sat Flow(s),veh/h/ln	1721	1770	1744	1774	1695	1773	1721	1770	1795	1774	1695	1595
Q Serve(g_s), s	4.9	30.1	30.1	4.3	12.3	12.4	6.0	17.3	17.3	3.1	14.7	14.8
Cycle Q Clear(g_c), s	4.9	30.1	30.1	4.3	12.3	12.4	6.0	17.3	17.3	3.1	14.7	14.8
Prop In Lane	1.00		0.39	1.00		0.29	1.00		0.21	1.00		0.95
Lane Grp Cap(c), veh/h	382	666	656	170	1224	640	258	625	634	133	1196	563
V/C Ratio(X)	0.58	1.01	1.02	0.59	0.54	0.54	1.21	0.71	0.71	0.54	0.63	0.63
Avail Cap(c_a), veh/h	387	666	656	244	1356	709	258	663	673	133	1271	598
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	25.0	25.0	34.7	20.3	20.3	37.0	22.4	22.4	35.7	21.5	21.6
Incr Delay (d2), s/veh	2.2	38.4	41.2	3.2	0.4	0.7	124.6	3.3	3.3	4.4	0.9	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	21.7	21.9	2.3	5.8	6.2	7.3	8.9	9.1	1.7	7.0	6.8
LnGrp Delay(d),s/veh	36.0	63.3	66.2	37.9	20.6	21.0	161.6	25.7	25.6	40.1	22.4	23.5
LnGrp LOS	D	F	F	D	C	C	F	C	C	D	C	C
Approach Vol, veh/h		1569			1104			1205			1175	
Approach Delay, s/veh		60.6			22.3			60.8			23.8	
Approach LOS		E			C			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	32.1	8.0	30.2	10.9	30.9	8.0	30.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	28.0	28.0	4.0	28.0	7.0	30.0	4.0	28.0				
Max Q Clear Time (g_c+10), s	32.1	32.1	8.0	16.8	6.9	14.4	5.1	19.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	8.6	0.0	12.5	0.0	6.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				43.8								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary  
6: Valencia & Bastanchury

2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	883	187	118	773	48	116	343	136	52	327	112
Future Volume (veh/h)	99	883	187	118	773	48	116	343	136	52	327	112
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	104	929	197	124	814	51	122	361	143	55	344	118
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	1503	672	215	1488	93	355	888	346	336	927	313
Arrive On Green	0.11	0.42	0.42	0.12	0.44	0.44	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	3383	212	926	2490	971	891	2600	878
Grp Volume(v), veh/h	104	929	197	124	426	439	122	255	249	55	232	230
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1825	926	1770	1691	891	1770	1708
Q Serve(g_s), s	3.4	12.6	5.0	4.1	10.9	10.9	6.9	6.7	6.8	3.1	6.0	6.1
Cycle Q Clear(g_c), s	3.4	12.6	5.0	4.1	10.9	10.9	13.1	6.7	6.8	9.9	6.0	6.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.57	1.00		0.51
Lane Grp Cap(c), veh/h	188	1503	672	215	778	803	355	631	603	336	631	609
V/C Ratio(X)	0.55	0.62	0.29	0.58	0.55	0.55	0.34	0.40	0.41	0.16	0.37	0.38
Avail Cap(c_a), veh/h	260	1554	695	433	949	979	431	777	742	409	777	750
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	13.8	11.6	25.5	12.7	12.7	19.6	14.9	14.9	18.7	14.7	14.7
Incr Delay (d2), s/veh	2.5	0.7	0.2	2.4	0.6	0.6	0.6	0.4	0.5	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.2	2.2	2.1	5.5	5.6	1.8	3.3	3.3	0.8	3.0	2.9
LnGrp Delay(d),s/veh	28.6	14.5	11.9	27.9	13.3	13.3	20.2	15.3	15.4	18.9	15.0	15.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	B	B	B
Approach Vol, veh/h		1230			989			626			517	
Approach Delay, s/veh		15.3			15.1			16.3			15.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	28.1		23.9	8.5	29.0		23.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	30.0	25.0		25.0	7.0	31.0		25.0				
Max Q Clear Time (g_c+10), s	10.0	14.6		11.9	5.4	12.9		15.1				
Green Ext Time (p_c), s	0.2	7.9		5.8	0.0	12.1		4.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				15.5								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	973	45	46	902	22	38	16	45	18	11	6
Future Volume (veh/h)	6	973	45	46	902	22	38	16	45	18	11	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	1024	47	48	949	23	40	17	47	19	12	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	575	2432	112	536	2492	60	259	44	118	300	100	44
Arrive On Green	0.71	0.71	0.71	0.71	0.71	0.71	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	576	3446	158	525	3532	86	597	263	708	754	599	262
Grp Volume(v), veh/h	6	526	545	48	476	496	104	0	0	37	0	0
Grp Sat Flow(s),veh/h/ln	576	1770	1835	525	1770	1848	1568	0	0	1615	0	0
Q Serve(g_s), s	0.1	3.9	3.9	1.3	3.4	3.4	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.5	3.9	3.9	5.2	3.4	3.4	1.8	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.05	0.38		0.45	0.51		0.16
Lane Grp Cap(c), veh/h	575	1249	1295	536	1249	1304	420	0	0	443	0	0
V/C Ratio(X)	0.01	0.42	0.42	0.09	0.38	0.38	0.25	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	667	1531	1588	619	1531	1599	1594	0	0	1596	0	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.6	1.9	1.9	3.0	1.8	1.8	11.6	0.0	0.0	11.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.2	0.2	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.9	0.2	1.7	1.7	0.8	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	2.6	2.2	2.1	3.1	2.0	2.0	11.9	0.0	0.0	11.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		1077			1020			104			37	
Approach Delay, s/veh		2.1			2.1			11.9			11.2	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		7.2		24.0		7.2		24.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		3.8		5.9		2.5		7.2				
Green Ext Time (p_c), s		0.7		13.5		0.8		12.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				2.7								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
8: Bradford & Yorba Linda

2040 Proposed GP PM  
07/12/2018



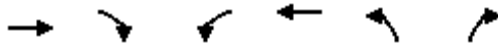
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑↑ ↗			↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	77	1497	145	254	1248	110	211	137	281	121	96	28
Future Volume (veh/h)	77	1497	145	254	1248	110	211	137	281	121	96	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	81	1576	153	267	1314	116	222	144	296	127	101	29
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	1874	182	297	2259	199	475	622	529	384	465	134
Arrive On Green	0.09	0.40	0.40	0.17	0.47	0.47	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1774	4715	457	1774	4759	420	1255	1863	1583	945	1392	400
Grp Volume(v), veh/h	81	1133	596	267	936	494	222	144	296	127	0	130
Grp Sat Flow(s),veh/h/ln	1774	1695	1782	1774	1695	1789	1255	1863	1583	945	0	1792
Q Serve(g_s), s	2.6	18.0	18.1	8.8	11.9	11.9	9.2	3.3	9.1	6.7	0.0	3.1
Cycle Q Clear(g_c), s	2.6	18.0	18.1	8.8	11.9	11.9	12.3	3.3	9.1	10.0	0.0	3.1
Prop In Lane	1.00		0.26	1.00		0.23	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	160	1348	708	297	1610	849	475	622	529	384	0	599
V/C Ratio(X)	0.50	0.84	0.84	0.90	0.58	0.58	0.47	0.23	0.56	0.33	0.00	0.22
Avail Cap(c_a), veh/h	178	1364	717	297	1610	849	687	937	797	544	0	902
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	16.3	16.3	24.3	11.4	11.4	18.7	14.3	16.3	17.9	0.0	14.3
Incr Delay (d2), s/veh	2.4	4.8	8.8	27.8	0.5	1.0	0.7	0.2	0.9	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	9.2	10.5	6.6	5.6	6.0	3.2	1.8	4.1	1.8	0.0	1.5
LnGrp Delay(d),s/veh	28.3	21.1	25.1	52.1	11.9	12.4	19.4	14.5	17.2	18.4	0.0	14.4
LnGrp LOS	C	C	C	D	B	B	B	B	B	B		B
Approach Vol, veh/h		1810			1697			662			257	
Approach Delay, s/veh		22.7			18.4			17.3			16.4	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	2.0	25.7		21.9	7.4	30.3		21.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	22.0		28.0	4.0	26.0		28.0				
Max Q Clear Time (g_c+110), s	20.1	20.1		12.0	4.6	13.9		14.3				
Green Ext Time (p_c), s	0.0	1.6		3.8	0.0	11.3		3.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.9								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↑ ↑ ↑		↖ ↗	↑ ↑ ↑		↖ ↗	↑ ↑	↖	↖	↑ ↑ ↑	↖
Traffic Volume (veh/h)	247	1338	189	186	1158	164	276	789	224	182	634	235
Future Volume (veh/h)	247	1338	189	186	1158	164	276	789	224	182	634	235
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	260	1408	199	196	1219	173	291	831	236	192	667	247
Adj No. of Lanes	2	3	0	1	3	0	2	2	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	390	1679	237	201	1678	238	234	1136	508	181	1805	562
Arrive On Green	0.11	0.37	0.37	0.11	0.37	0.37	0.07	0.32	0.32	0.10	0.35	0.35
Sat Flow, veh/h	3442	4504	636	1774	4501	639	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	260	1060	547	196	918	474	291	831	236	192	667	247
Grp Sat Flow(s),veh/h/ln	1721	1695	1750	1774	1695	1750	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	6.4	25.1	25.2	9.7	20.5	20.5	6.0	18.4	10.5	9.0	8.6	10.5
Cycle Q Clear(g_c), s	6.4	25.1	25.2	9.7	20.5	20.5	6.0	18.4	10.5	9.0	8.6	10.5
Prop In Lane	1.00		0.36	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	1264	653	201	1264	652	234	1136	508	181	1805	562
V/C Ratio(X)	0.67	0.84	0.84	0.97	0.73	0.73	1.24	0.73	0.46	1.06	0.37	0.44
Avail Cap(c_a), veh/h	390	1269	655	201	1269	655	234	1204	539	181	1904	593
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	25.2	25.2	38.9	23.8	23.8	41.1	26.6	23.9	39.6	21.1	21.7
Incr Delay (d2), s/veh	4.3	5.1	9.4	55.7	2.1	4.0	139.8	2.2	0.7	83.7	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.5	13.9	7.9	9.9	10.6	7.4	9.2	4.7	8.6	4.0	4.7
LnGrp Delay(d),s/veh	41.7	30.3	34.7	94.7	25.9	27.8	180.8	28.7	24.5	123.3	21.2	22.3
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1867			1588			1358			1106	
Approach Delay, s/veh		33.2			35.0			60.6			39.2	
Approach LOS		C			C			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.0	34.9	8.0	33.3	12.0	34.9	11.0	30.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	31.0	4.0	31.0	8.0	31.0	7.0	28.0				
Max Q Clear Time (g_c+I1), s	3.0	27.2	8.0	12.5	8.4	22.5	11.0	20.4				
Green Ext Time (p_c), s	0.0	3.7	0.0	11.8	0.0	8.0	0.0	5.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				41.1								
HCM 2010 LOS				D								

HCM Signalized Intersection Capacity Analysis  
 10: Palm & Yorba Linda

2040 Proposed GP PM  
 07/12/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Traffic Volume (vph)	1309	401	46	1185	336	50
Future Volume (vph)	1309	401	46	1185	336	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0		2.0	2.0	2.0	
Lane Util. Factor	0.91		1.00	0.95	0.97	
Frt	0.96		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	4906		1770	3539	3395	
Flt Permitted	1.00		0.16	1.00	0.96	
Satd. Flow (perm)	4906		305	3539	3395	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1378	422	48	1247	354	53
RTOR Reduction (vph)	87	0	0	0	18	0
Lane Group Flow (vph)	1713	0	48	1247	389	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	6	
Permitted Phases			8		6	
Actuated Green, G (s)	22.4		22.4	22.4	9.7	
Effective Green, g (s)	24.4		24.4	24.4	11.7	
Actuated g/C Ratio	0.61		0.61	0.61	0.29	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2985		185	2153	990	
v/s Ratio Prot	0.35			c0.35	c0.11	
v/s Ratio Perm			0.16			
v/c Ratio	0.57		0.26	0.58	0.39	
Uniform Delay, d1	4.7		3.6	4.7	11.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.3		0.7	0.4	0.3	
Delay (s)	5.0		4.4	5.1	11.6	
Level of Service	A		A	A	B	
Approach Delay (s)	5.0			5.1	11.6	
Approach LOS	A			A	B	

Intersection Summary

HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	4.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 11: Valencia & Yorba Linda

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1040	44	38	866	127	40	222	47	138	322	266
Future Volume (veh/h)	250	1040	44	38	866	127	40	222	47	138	322	266
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	263	1095	46	40	912	134	42	234	49	145	339	280
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	1680	752	118	1496	642	291	1044	215	450	664	538
Arrive On Green	0.12	0.47	0.47	0.07	0.42	0.42	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	801	2924	602	1092	1859	1508
Grp Volume(v), veh/h	263	1095	46	40	912	134	42	140	143	145	322	297
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	801	1770	1757	1092	1770	1597
Q Serve(g_s), s	7.0	13.9	0.9	1.3	11.8	3.3	2.6	3.3	3.4	6.3	8.5	8.7
Cycle Q Clear(g_c), s	7.0	13.9	0.9	1.3	11.8	3.3	11.2	3.3	3.4	9.7	8.5	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.94
Lane Grp Cap(c), veh/h	211	1680	752	118	1496	642	291	632	627	450	632	570
V/C Ratio(X)	1.25	0.65	0.06	0.34	0.61	0.21	0.14	0.22	0.23	0.32	0.51	0.52
Avail Cap(c_a), veh/h	211	1680	752	180	1620	696	412	900	893	615	900	812
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	11.8	8.4	26.3	13.2	10.8	19.4	13.2	13.3	16.7	14.9	15.0
Incr Delay (d2), s/veh	145.3	0.9	0.0	1.7	0.6	0.2	0.2	0.2	0.2	0.4	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.9	0.4	0.7	5.8	1.4	0.6	1.6	1.7	1.9	4.2	3.9
LnGrp Delay(d),s/veh	171.3	12.7	8.4	28.0	13.8	10.9	19.6	13.4	13.5	17.1	15.5	15.7
LnGrp LOS	F	B	A	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		1404			1086			325			764	
Approach Delay, s/veh		42.3			14.0			14.2			15.9	
Approach LOS		D			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	30.0		23.1	9.0	26.9		23.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	26.0		28.0	5.0	25.0		28.0				
Max Q Clear Time (g_c+1), s	13.3	15.9		11.7	9.0	13.8		13.2				
Green Ext Time (p_c), s	0.0	8.4		6.1	0.0	9.1		5.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				25.5								
HCM 2010 LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	131	908	76	224	715	174	178	940	207	165	593	108
Future Volume (veh/h)	131	908	76	224	715	174	178	940	207	165	593	108
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1788	1863	1863	1863
Adj Flow Rate, veh/h	138	956	80	236	753	183	187	989	218	174	624	114
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1223	525	296	1396	599	127	1135	487	127	1135	508
Arrive On Green	0.12	0.35	0.35	0.17	0.39	0.39	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3539	1520	1774	3539	1583
Grp Volume(v), veh/h	138	956	80	236	753	183	187	989	218	174	624	114
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1770	1520	1774	1770	1583
Q Serve(g_s), s	6.2	20.3	3.0	10.7	13.7	7.0	6.0	22.1	9.5	6.0	12.2	4.4
Cycle Q Clear(g_c), s	6.2	20.3	3.0	10.7	13.7	7.0	6.0	22.1	9.5	6.0	12.2	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	1223	525	296	1396	599	127	1135	487	127	1135	508
V/C Ratio(X)	0.66	0.78	0.15	0.80	0.54	0.31	1.47	0.87	0.45	1.37	0.55	0.22
Avail Cap(c_a), veh/h	211	1266	544	296	1434	616	127	1139	489	127	1139	510
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	24.6	19.0	33.6	19.5	17.5	38.9	26.9	22.6	38.9	23.5	20.9
Incr Delay (d2), s/veh	7.2	3.1	0.1	14.1	0.4	0.3	250.8	7.6	0.6	209.1	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	10.4	1.3	6.4	6.8	2.9	11.7	11.9	4.1	10.3	6.1	2.0
LnGrp Delay(d),s/veh	42.6	27.8	19.1	47.7	19.9	17.8	289.8	34.4	23.2	248.0	24.1	21.1
LnGrp LOS	D	C	B	D	B	B	F	C	C	F	C	C
Approach Vol, veh/h		1174			1172			1394			912	
Approach Delay, s/veh		28.9			25.2			66.9			66.4	
Approach LOS		C			C			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	31.0	8.0	28.9	11.9	35.1	8.0	28.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	2.0	28.0	4.0	25.0	8.0	32.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	2.5	22.3	8.0	14.2	8.2	15.7	8.0	24.1				
Green Ext Time (p_c), s	0.0	4.7	0.0	8.0	0.0	11.3	0.0	0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				46.7								
HCM 2010 LOS				D								





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	16	16	6	118	12	78	8	1278	151	75	921	26
Future Volume (veh/h)	16	16	6	118	12	78	8	1278	151	75	921	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	17	6	124	13	82	8	1345	159	79	969	27
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	58	735	106	6	735	70	1260	564	154	1428	639
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.04	0.36	0.36	0.09	0.40	0.40
Sat Flow, veh/h	0	124	1583	0	13	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	34	0	6	137	0	82	8	1345	159	79	969	27
Grp Sat Flow(s),veh/h/ln	124	0	1583	13	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	1.9	0.3	23.0	4.6	2.7	14.5	0.7
Cycle Q Clear(g_c), s	30.0	0.0	0.1	30.0	0.0	1.9	0.3	23.0	4.6	2.7	14.5	0.7
Prop In Lane	0.50		1.00	0.91		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	0	735	112	0	735	70	1260	564	154	1428	639
V/C Ratio(X)	0.24	0.00	0.01	1.22	0.00	0.11	0.11	1.07	0.28	0.51	0.68	0.04
Avail Cap(c_a), veh/h	141	0	735	112	0	735	165	1260	564	165	1428	639
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	0.0	9.3	30.7	0.0	9.8	29.9	20.8	14.9	28.2	15.8	11.7
Incr Delay (d2), s/veh	0.9	0.0	0.0	155.8	0.0	0.1	0.7	45.4	0.3	2.6	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.1	6.8	0.0	0.8	0.2	19.0	2.1	1.5	7.3	0.3
LnGrp Delay(d),s/veh	16.4	0.0	9.3	186.5	0.0	9.8	30.7	66.2	15.2	30.8	17.1	11.7
LnGrp LOS	B		A	F		A	C	F	B	C	B	B
Approach Vol, veh/h		40			219			1512			1075	
Approach Delay, s/veh		15.3			120.3			60.7			18.0	
Approach LOS		B			F			E			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	4.5	28.1		32.0	7.6	25.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		32.0	2.3	16.5		32.0	4.7	25.0				
Green Ext Time (p_c), s		0.0	0.0	4.1		0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			48.5									
HCM 2010 LOS			D									

**Intersection**

Intersection Delay, s/veh 17.6

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕				↕		↖	↕	↖
Traffic Vol, veh/h	77	416	18	25	308	146	0	5	39	18	238	37	56
Future Vol, veh/h	77	416	18	25	308	146	0	5	39	18	238	37	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	438	19	26	324	154	0	5	41	19	251	39	59
Number of Lanes	1	2	0	1	2	0	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	3	3
HCM Control Delay	18.2	17.3	13	17.9
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	8%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	63%	0%	100%	89%	0%	100%	41%	0%	100%	0%
Vol Right, %	29%	0%	0%	11%	0%	0%	59%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	77	277	157	25	205	249	238	37	56
LT Vol	5	77	0	0	25	0	0	238	0	0
Through Vol	39	0	277	139	0	205	103	0	37	0
RT Vol	18	0	0	18	0	0	146	0	0	56
Lane Flow Rate	65	81	292	165	26	216	262	251	39	59
Geometry Grp	8	8	8	8	8	8	8	7	7	7
Degree of Util (X)	0.156	0.183	0.618	0.346	0.06	0.464	0.531	0.562	0.082	0.112
Departure Headway (Hd)	8.617	8.137	7.626	7.544	8.236	7.726	7.306	8.073	7.567	6.859
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	415	441	473	477	434	467	492	446	473	522
Service Time	6.389	5.892	5.381	5.299	5.992	5.481	5.061	5.82	5.314	4.605
HCM Lane V/C Ratio	0.157	0.184	0.617	0.346	0.06	0.463	0.533	0.563	0.082	0.113
HCM Control Delay	13	12.7	22	14.3	11.5	17	18.1	20.7	11	10.5
HCM Lane LOS	B	B	C	B	B	C	C	C	B	B
HCM 95th-tile Q	0.5	0.7	4.1	1.5	0.2	2.4	3.1	3.4	0.3	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	4	563	5	5	8	452	1228	11	8	933	82
Future Volume (veh/h)	61	4	563	5	5	8	452	1228	11	8	933	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	64	4	593	5	5	8	476	1293	12	8	982	86
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	610	901	240	219	498	429	1991	855	60	1254	539
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.24	0.56	0.56	0.03	0.35	0.35
Sat Flow, veh/h	1395	1863	1583	524	669	1520	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	64	4	593	10	0	8	476	1293	12	8	982	86
Grp Sat Flow(s),veh/h/ln	1395	1863	1583	1193	0	1520	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	2.6	0.1	20.3	0.0	0.0	0.3	19.0	19.8	0.3	0.3	19.5	3.0
Cycle Q Clear(g_c), s	2.8	0.1	20.3	0.3	0.0	0.3	19.0	19.8	0.3	0.3	19.5	3.0
Prop In Lane	1.00		1.00	0.50		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	543	610	901	459	0	498	429	1991	855	60	1254	539
V/C Ratio(X)	0.12	0.01	0.66	0.02	0.00	0.02	1.11	0.65	0.01	0.13	0.78	0.16
Avail Cap(c_a), veh/h	619	711	988	521	0	580	429	1991	855	136	1352	580
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	17.8	11.6	17.9	0.0	17.9	29.8	11.8	7.6	36.8	22.7	17.4
Incr Delay (d2), s/veh	0.1	0.0	1.4	0.0	0.0	0.0	76.6	0.8	0.0	1.0	2.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	9.1	0.1	0.0	0.1	18.3	9.7	0.1	0.2	9.9	1.3
LnGrp Delay(d),s/veh	18.9	17.8	13.1	17.9	0.0	17.9	106.3	12.6	7.6	37.9	25.5	17.5
LnGrp LOS	B	B	B	B		B	F	B	A	D	C	B
Approach Vol, veh/h		661			18			1781			1076	
Approach Delay, s/veh		13.7			17.9			37.6			25.0	
Approach LOS		B			B			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.7	21.0	29.8		27.7	4.6	46.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		22.3	21.0	21.5		2.3	2.3	21.8				
Green Ext Time (p_c), s		1.5	0.0	4.4		2.7	0.0	15.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			29.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
16: Bradford & Madison

2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	158	102	113	203	102	99	376	162	92	358	106
Future Volume (veh/h)	105	158	102	113	203	102	99	376	162	92	358	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	111	166	107	119	214	107	104	396	171	97	377	112
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	500	440	359	536	450	383	534	693	589	511	689	562
Arrive On Green	0.11	0.24	0.24	0.11	0.24	0.24	0.11	0.37	0.37	0.10	0.37	0.37
Sat Flow, veh/h	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Grp Volume(v), veh/h	111	166	107	119	214	107	104	396	171	97	377	112
Grp Sat Flow(s),veh/h/ln	1774	1863	1520	1774	1863	1583	1774	1863	1583	1774	1863	1520
Q Serve(g_s), s	2.0	3.5	2.7	2.1	4.6	2.5	1.5	7.9	3.5	1.4	7.4	2.3
Cycle Q Clear(g_c), s	2.0	3.5	2.7	2.1	4.6	2.5	1.5	7.9	3.5	1.4	7.4	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	500	440	359	536	450	383	534	693	589	511	689	562
V/C Ratio(X)	0.22	0.38	0.30	0.22	0.48	0.28	0.19	0.57	0.29	0.19	0.55	0.20
Avail Cap(c_a), veh/h	536	964	786	677	1084	921	575	1124	956	555	1124	917
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.8	14.8	14.5	10.5	15.1	14.3	7.4	11.6	10.3	7.5	11.5	9.9
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.2	0.8	0.4	0.2	0.7	0.3	0.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.8	1.2	1.1	2.4	1.1	0.7	4.1	1.6	0.7	3.9	1.0
LnGrp Delay(d),s/veh	11.0	15.4	15.0	10.7	15.9	14.7	7.6	12.4	10.5	7.7	12.2	10.1
LnGrp LOS	B	B	B	B	B	B	A	B	B	A	B	B
Approach Vol, veh/h		384			440			671			586	
Approach Delay, s/veh		14.0			14.2			11.1			11.1	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	19.3	7.3	13.0	7.0	19.2	7.1	13.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	7.0	22.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1), s	13.4	9.9	4.1	5.5	3.5	9.4	4.0	6.6				
Green Ext Time (p_c), s	0.0	5.4	0.1	2.7	0.0	5.5	0.0	2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.3								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	30	228	4	16	16	249	1310	7	35	868	119
Future Volume (veh/h)	156	30	228	4	16	16	249	1310	7	35	868	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1900	1863	1863	1863	1863	1788	1863	1863	1788
Adj Flow Rate, veh/h	164	32	240	4	17	17	262	1379	7	37	914	125
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	485	476	389	127	408	405	539	1945	835	377	1772	761
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.12	0.55	0.55	0.07	0.50	0.50
Sat Flow, veh/h	1369	1863	1520	158	1596	1583	1774	3539	1520	1774	3539	1520
Grp Volume(v), veh/h	164	32	240	21	0	17	262	1379	7	37	914	125
Grp Sat Flow(s),veh/h/ln	1369	1863	1520	1754	0	1583	1774	1770	1520	1774	1770	1520
Q Serve(g_s), s	5.0	0.6	6.9	0.0	0.0	0.4	2.9	14.2	0.1	0.4	8.6	2.2
Cycle Q Clear(g_c), s	5.5	0.6	6.9	0.4	0.0	0.4	2.9	14.2	0.1	0.4	8.6	2.2
Prop In Lane	1.00		1.00	0.19		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	485	476	389	536	0	405	539	1945	835	377	1772	761
V/C Ratio(X)	0.34	0.07	0.62	0.04	0.00	0.04	0.49	0.71	0.01	0.10	0.52	0.16
Avail Cap(c_a), veh/h	2664	3442	2808	3157	0	2925	539	1945	835	464	1940	833
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	13.9	16.2	13.8	0.0	13.8	5.5	8.2	5.0	6.1	8.3	6.7
Incr Delay (d2), s/veh	0.4	0.1	1.6	0.0	0.0	0.0	0.7	1.2	0.0	0.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.3	3.0	0.2	0.0	0.2	1.5	7.0	0.0	0.2	4.1	0.9
LnGrp Delay(d),s/veh	16.3	13.9	17.8	13.8	0.0	13.8	6.2	9.4	5.0	6.2	8.5	6.8
LnGrp LOS	B	B	B	B		B	A	A	A	A	A	A
Approach Vol, veh/h		436			38			1648			1076	
Approach Delay, s/veh		16.9			13.8			8.9			8.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.6	8.0	26.7		14.6	5.6	29.1				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		89.0	4.0	25.0		89.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s		8.9	4.9	10.6		2.4	2.4	16.2				
Green Ext Time (p_c), s		1.7	0.0	12.1		1.7	0.0	7.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			9.8									
HCM 2010 LOS			A									



Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↶	↶	↷	↷	↶	↷		
Traffic Volume (veh/h)	198	237	1448	295	181	1289		
Future Volume (veh/h)	198	237	1448	295	181	1289		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1788	1863	1863		
Adj Flow Rate, veh/h	208	249	1524	311	191	1357		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	426	380	1679	721	309	2427		
Arrive On Green	0.24	0.24	0.47	0.47	0.17	0.69		
Sat Flow, veh/h	1774	1583	3632	1520	1774	3632		
Grp Volume(v), veh/h	208	249	1524	311	191	1357		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1520	1774	1770		
Q Serve(g_s), s	5.4	7.7	21.5	7.3	5.4	10.6		
Cycle Q Clear(g_c), s	5.4	7.7	21.5	7.3	5.4	10.6		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	426	380	1679	721	309	2427		
V/C Ratio(X)	0.49	0.65	0.91	0.43	0.62	0.56		
Avail Cap(c_a), veh/h	887	792	1679	721	887	3212		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.6	18.5	13.1	9.4	20.6	4.3		
Incr Delay (d2), s/veh	0.9	1.9	7.6	0.4	2.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.8	6.7	12.1	3.1	2.8	5.0		
LnGrp Delay(d),s/veh	18.5	20.4	20.7	9.8	22.6	4.5		
LnGrp LOS	B	C	C	A	C	A		
Approach Vol, veh/h	457		1835			1548		
Approach Delay, s/veh	19.5		18.9			6.8		
Approach LOS	B		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.0		15.0	11.4	27.6
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				47.0		25.0	25.0	18.0
Max Q Clear Time (g_c+I1), s				12.6		9.7	7.4	23.5
Green Ext Time (p_c), s				22.5		1.3	0.5	0.0
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			14.1					
HCM 2010 LOS			B					

HCM Signalized Intersection Capacity Analysis  
 19: Placentia & Nutwood

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	618	41	290	33	56	12	128	715	19	13	520	361
Future Volume (vph)	618	41	290	33	56	12	128	715	19	13	520	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00		1.00	0.94	
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1695	1583	1770	1812		1770	3525		1770	3322	
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.23	1.00		0.30	1.00	
Satd. Flow (perm)	1681	1695	1583	1770	1812		434	3525		554	3322	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	651	43	305	35	59	13	135	753	20	14	547	380
RTOR Reduction (vph)	0	0	236	0	12	0	0	4	0	0	183	0
Lane Group Flow (vph)	345	349	69	35	60	0	135	769	0	14	744	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	5	5		1	1			8				4
Permitted Phases			5				8			4		
Actuated Green, G (s)	6.7	6.7	6.7	1.9	1.9		18.1	18.1		18.1	18.1	
Effective Green, g (s)	8.7	8.7	8.7	3.9	3.9		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.22	0.22	0.22	0.10	0.10		0.52	0.52		0.52	0.52	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	377	381	355	178	182		225	1830		287	1725	
v/s Ratio Prot	0.21	c0.21		0.02	c0.03			0.22				0.22
v/s Ratio Perm			0.04				c0.31			0.03		
v/c Ratio	0.92	0.92	0.19	0.20	0.33		0.60	0.42		0.05	0.43	
Uniform Delay, d1	14.6	14.6	12.2	16.0	16.2		6.5	5.7		4.6	5.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.2	26.1	0.3	0.5	1.1		4.3	0.2		0.1	0.2	
Delay (s)	40.8	40.7	12.4	16.5	17.3		10.8	5.9		4.7	5.9	
Level of Service	D	D	B	B	B		B	A		A	A	
Approach Delay (s)		32.1			17.0			6.6			5.9	
Approach LOS		C			B			A			A	

Intersection Summary

HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Volume (veh/h)	70	62	13	169	90	331	15	1150	220	301	683	101
Future Volume (veh/h)	70	62	13	169	90	331	15	1150	220	301	683	101
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1788
Adj Flow Rate, veh/h	74	65	14	178	95	348	16	1211	232	317	719	106
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	348	442	95	452	554	471	78	1724	771	229	2026	870
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.04	0.49	0.49	0.13	0.57	0.57
Sat Flow, veh/h	943	1486	320	1314	1863	1583	1774	3539	1583	1774	3539	1520
Grp Volume(v), veh/h	74	0	79	178	95	348	16	1211	232	317	719	106
Grp Sat Flow(s),veh/h/ln	943	0	1806	1314	1863	1583	1774	1770	1583	1774	1770	1520
Q Serve(g_s), s	4.4	0.0	2.2	8.0	2.6	13.8	0.6	18.6	6.1	9.0	7.6	2.2
Cycle Q Clear(g_c), s	7.0	0.0	2.2	10.3	2.6	13.8	0.6	18.6	6.1	9.0	7.6	2.2
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	0	537	452	554	471	78	1724	771	229	2026	870
V/C Ratio(X)	0.21	0.00	0.15	0.39	0.17	0.74	0.20	0.70	0.30	1.38	0.35	0.12
Avail Cap(c_a), veh/h	514	0	856	684	882	750	153	1880	841	229	2032	873
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	18.0	21.7	18.1	22.0	32.1	13.9	10.7	30.3	8.0	6.8
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.6	0.1	2.3	1.3	1.1	0.2	197.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.1	3.0	1.4	6.3	0.3	9.2	2.7	16.9	3.7	0.9
LnGrp Delay(d),s/veh	21.0	0.0	18.1	22.3	18.3	24.3	33.4	15.0	10.9	227.6	8.1	6.9
LnGrp LOS	C		B	C	B	C	C	B	B	F	A	A
Approach Vol, veh/h		153			621			1459			1142	
Approach Delay, s/veh		19.5			22.8			14.6			68.9	
Approach LOS		B			C			B			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.7	5.1	41.9		22.7	11.0	35.9				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		31.0	4.0	38.0		31.0	7.0	35.0				
Max Q Clear Time (g_c+I1), s		9.0	2.6	9.6		15.8	11.0	20.6				
Green Ext Time (p_c), s		3.2	0.0	19.0		2.9	0.0	11.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				34.7								
HCM 2010 LOS				C								



HCM 2010 Signalized Intersection Summary  
 21: Rose & Alta Vista

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Volume (veh/h)	301	248	106	102	281	115	211	1287	53	128	921	242
Future Volume (veh/h)	301	248	106	102	281	115	211	1287	53	128	921	242
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	317	261	112	107	296	121	222	1355	56	135	969	255
Adj No. of Lanes	1	2	0	1	2	0	2	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	757	316	189	611	244	320	1833	76	320	1861	579
Arrive On Green	0.17	0.31	0.31	0.11	0.25	0.25	0.09	0.37	0.37	0.09	0.37	0.37
Sat Flow, veh/h	1774	2436	1017	1774	2470	988	3442	5009	207	3442	5085	1583
Grp Volume(v), veh/h	317	188	185	107	210	207	222	917	494	135	969	255
Grp Sat Flow(s),veh/h/ln	1774	1770	1683	1774	1770	1688	1721	1695	1826	1721	1695	1583
Q Serve(g_s), s	11.0	5.3	5.5	3.7	6.6	6.8	4.0	15.2	15.2	2.4	9.6	7.9
Cycle Q Clear(g_c), s	11.0	5.3	5.5	3.7	6.6	6.8	4.0	15.2	15.2	2.4	9.6	7.9
Prop In Lane	1.00		0.60	1.00		0.58	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	302	550	523	189	438	417	320	1240	668	320	1861	579
V/C Ratio(X)	1.05	0.34	0.35	0.57	0.48	0.50	0.69	0.74	0.74	0.42	0.52	0.44
Avail Cap(c_a), veh/h	302	1041	990	247	986	941	320	1259	678	320	1889	588
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	17.2	17.2	27.4	20.8	20.9	28.4	17.8	17.8	27.7	16.1	15.5
Incr Delay (d2), s/veh	65.4	0.4	0.4	2.6	0.8	0.9	6.4	2.3	4.2	0.9	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.6	2.6	2.0	3.3	3.3	2.2	7.4	8.3	1.2	4.5	3.5
LnGrp Delay(d),s/veh	92.2	17.5	17.7	30.1	21.6	21.8	34.8	20.1	22.0	28.6	16.3	16.0
LnGrp LOS	F	B	B	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		690			524			1633			1359	
Approach Delay, s/veh		51.9			23.4			22.7			17.5	
Approach LOS		D			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	22.1	8.0	25.6	13.0	18.0	8.0	25.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	36.0	4.0	4.0	22.0	9.0	34.0	4.0	22.0				
Max Q Clear Time (g_c+11), s	7.5	6.0	11.6	13.0	8.8	4.4	17.2					
Green Ext Time (p_c), s	0.0	5.3	0.0	9.1	0.0	5.2	0.0	4.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				25.9								
HCM 2010 LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	66	335	83	24	212	23	163	67	110	4	18	42
Future Volume (veh/h)	66	335	83	24	212	23	163	67	110	4	18	42
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	69	353	87	25	223	24	172	71	116	4	19	44
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1074	261	170	1118	119	645	583	496	594	554	496
Arrive On Green	0.13	0.38	0.38	0.10	0.35	0.35	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1774	2824	687	1774	3228	344	1334	1863	1583	1192	1770	1583
Grp Volume(v), veh/h	69	220	220	25	121	126	172	71	116	4	19	44
Grp Sat Flow(s),veh/h/ln	1774	1770	1741	1774	1770	1802	1334	1863	1583	1192	1770	1583
Q Serve(g_s), s	1.0	2.5	2.6	0.4	1.4	1.4	3.0	0.8	1.5	0.1	0.2	0.6
Cycle Q Clear(g_c), s	1.0	2.5	2.6	0.4	1.4	1.4	3.5	0.8	1.5	0.8	0.2	0.6
Prop In Lane	1.00		0.39	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	673	662	170	613	624	645	583	496	594	554	496
V/C Ratio(X)	0.30	0.33	0.33	0.15	0.20	0.20	0.27	0.12	0.23	0.01	0.03	0.09
Avail Cap(c_a), veh/h	374	1868	1838	437	1930	1965	1494	1769	1504	1353	1681	1504
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	6.2	6.3	11.8	6.5	6.5	8.1	7.0	7.2	7.3	6.8	6.9
Incr Delay (d2), s/veh	0.7	0.3	0.3	0.4	0.2	0.2	0.2	0.1	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	1.3	0.2	0.7	0.7	1.1	0.4	0.7	0.0	0.1	0.3
LnGrp Delay(d),s/veh	11.9	6.5	6.5	12.2	6.7	6.7	8.4	7.1	7.5	7.3	6.8	7.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		509			272			359			67	
Approach Delay, s/veh		7.3			7.2			7.8			6.9	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	12.8		10.9	5.7	11.8		10.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	28.0	28.0		25.0	4.0	29.0		25.0				
Max Q Clear Time (g_c+1), s	4.6	4.6		2.8	3.0	3.4		5.5				
Green Ext Time (p_c), s	0.0	4.3		1.7	0.0	4.4		1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.4								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
 23: Placentia & Chapman

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↖	↑↑	↗	↔↔	↑↑		↖	↑↑	
Traffic Volume (veh/h)	280	970	211	157	949	172	286	455	169	229	397	193
Future Volume (veh/h)	280	970	211	157	949	172	286	455	169	229	397	193
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	295	1021	222	165	999	181	301	479	178	241	418	203
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	1259	740	198	1303	583	385	719	265	264	745	358
Arrive On Green	0.10	0.36	0.36	0.11	0.37	0.37	0.11	0.28	0.28	0.15	0.32	0.32
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	3442	2532	935	1774	2321	1115
Grp Volume(v), veh/h	295	1021	222	165	999	181	301	334	323	241	318	303
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1721	1770	1698	1774	1770	1666
Q Serve(g_s), s	6.8	21.0	7.0	7.3	20.0	6.6	6.9	13.4	13.6	10.8	12.0	12.2
Cycle Q Clear(g_c), s	6.8	21.0	7.0	7.3	20.0	6.6	6.9	13.4	13.6	10.8	12.0	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		0.67
Lane Grp Cap(c), veh/h	342	1259	740	198	1303	583	385	502	482	264	568	535
V/C Ratio(X)	0.86	0.81	0.30	0.83	0.77	0.31	0.78	0.66	0.67	0.91	0.56	0.57
Avail Cap(c_a), veh/h	342	1275	747	198	1319	590	385	594	569	264	659	621
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	23.5	13.3	35.0	22.4	18.1	34.8	25.4	25.5	33.7	22.6	22.7
Incr Delay (d2), s/veh	19.7	4.0	0.2	24.9	2.7	0.3	10.0	2.2	2.4	33.0	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	10.9	3.1	4.9	10.2	2.9	3.8	6.8	6.7	7.7	6.0	5.7
LnGrp Delay(d),s/veh	55.4	27.5	13.5	59.9	25.1	18.4	44.8	27.6	27.9	66.7	23.5	23.6
LnGrp LOS	E	C	B	E	C	B	D	C	C	E	C	C
Approach Vol, veh/h		1538			1345			958			862	
Approach Delay, s/veh		30.8			28.5			33.1			35.6	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	30.6	11.0	27.9	10.0	31.6	14.0	24.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	27.0	7.0	28.0	6.0	28.0	10.0	25.0				
Max Q Clear Time (g_c+1/3), s	19.3	23.0	8.9	14.2	8.8	22.0	12.8	15.6				
Green Ext Time (p_c), s	0.0	3.6	0.0	6.8	0.0	5.3	0.0	5.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				31.5								
HCM 2010 LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	856	61	58	834	182	42	187	73	105	151	309
Future Volume (veh/h)	308	856	61	58	834	182	42	187	73	105	151	309
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	324	901	64	61	878	192	44	197	77	111	159	325
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1721	122	136	1120	245	343	776	293	394	575	489
Arrive On Green	0.20	0.51	0.51	0.08	0.39	0.39	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1774	3352	238	1774	2889	632	908	2514	951	1101	1863	1583
Grp Volume(v), veh/h	324	476	489	61	538	532	44	137	137	111	159	325
Grp Sat Flow(s),veh/h/ln	1774	1770	1821	1774	1770	1751	908	1770	1695	1101	1863	1583
Q Serve(g_s), s	10.6	10.6	10.6	1.9	15.8	15.8	2.3	3.4	3.6	5.0	3.8	10.6
Cycle Q Clear(g_c), s	10.6	10.6	10.6	1.9	15.8	15.8	6.1	3.4	3.6	8.6	3.8	10.6
Prop In Lane	1.00		0.13	1.00		0.36	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	359	909	935	136	686	679	343	546	523	394	575	489
V/C Ratio(X)	0.90	0.52	0.52	0.45	0.78	0.78	0.13	0.25	0.26	0.28	0.28	0.67
Avail Cap(c_a), veh/h	359	909	935	240	747	739	477	807	773	556	849	722
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	9.6	9.6	26.2	16.0	16.0	17.8	15.3	15.4	18.6	15.5	17.8
Incr Delay (d2), s/veh	24.8	0.5	0.5	2.3	5.1	5.1	0.2	0.2	0.3	0.4	0.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	5.3	5.4	1.0	8.6	8.5	0.6	1.7	1.7	1.6	2.0	4.8
LnGrp Delay(d),s/veh	47.9	10.1	10.1	28.5	21.0	21.1	18.0	15.6	15.7	19.0	15.7	19.4
LnGrp LOS	D	B	B	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		1289			1131			318			595	
Approach Delay, s/veh		19.6			21.5			15.9			18.3	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	32.4		20.3	14.0	25.0		20.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	27.0		25.0	10.0	23.0		25.0				
Max Q Clear Time (g_c+13), s	13.5	12.6		12.6	12.6	17.8		8.1				
Green Ext Time (p_c), s	0.0	10.6		3.7	0.0	3.1		4.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.7								
HCM 2010 LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	212	468	174	76	521	77	349	1019	145	89	536	205
Future Volume (veh/h)	212	468	174	76	521	77	349	1019	145	89	536	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	223	493	183	80	548	81	367	1073	153	94	564	216
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1180	507	150	1036	445	173	1739	248	148	1360	507
Arrive On Green	0.13	0.33	0.33	0.08	0.29	0.29	0.10	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	4499	641	1774	3651	1362
Grp Volume(v), veh/h	223	493	183	80	548	81	367	808	418	94	523	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1750	1774	1695	1622
Q Serve(g_s), s	9.0	7.7	6.5	3.1	9.3	2.9	7.0	13.8	13.8	3.7	8.2	8.5
Cycle Q Clear(g_c), s	9.0	7.7	6.5	3.1	9.3	2.9	7.0	13.8	13.8	3.7	8.2	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.84
Lane Grp Cap(c), veh/h	223	1180	507	150	1036	445	173	1311	676	148	1263	605
V/C Ratio(X)	1.00	0.42	0.36	0.53	0.53	0.18	2.12	0.62	0.62	0.63	0.41	0.43
Avail Cap(c_a), veh/h	223	1580	678	198	1530	657	173	1466	756	148	1418	679
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	18.5	18.1	31.5	21.2	18.9	32.4	17.7	17.7	31.8	16.7	16.8
Incr Delay (d2), s/veh	60.7	0.2	0.4	2.9	0.4	0.2	522.5	0.7	1.3	8.5	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	3.8	2.8	1.6	4.6	1.2	28.5	6.5	6.9	2.2	3.9	3.9
LnGrp Delay(d),s/veh	92.0	18.7	18.5	34.4	21.6	19.1	554.9	18.4	19.0	40.2	16.9	17.2
LnGrp LOS	F	B	B	C	C	B	F	B	B	D	B	B
Approach Vol, veh/h		899			709			1593			874	
Approach Delay, s/veh		36.9			22.8			142.1			19.5	
Approach LOS		D			C			F			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	25.9	9.0	28.7	11.0	23.0	8.0	29.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+11), s	9.7	9.7	9.0	10.5	11.0	11.3	5.7	15.8				
Green Ext Time (p_c), s	0.0	8.2	0.0	12.4	0.0	7.7	0.0	9.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					71.9							
HCM 2010 LOS					E							



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↖↗		↖	↖↗	↖
Traffic Volume (veh/h)	136	82	78	241	95	211	73	652	165	104	525	103
Future Volume (veh/h)	136	82	78	241	95	211	73	652	165	104	525	103
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	143	86	82	254	100	222	77	686	174	109	553	108
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	495	330	315	510	700	595	494	1534	389	393	1940	868
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1053	878	837	1212	1863	1583	771	2798	709	640	3539	1583
Grp Volume(v), veh/h	143	0	168	254	100	222	77	434	426	109	553	108
Grp Sat Flow(s),veh/h/ln	1053	0	1715	1212	1863	1583	771	1770	1738	640	1770	1583
Q Serve(g_s), s	5.5	0.0	3.6	9.7	1.9	5.4	3.1	7.7	7.8	6.5	4.4	1.7
Cycle Q Clear(g_c), s	7.3	0.0	3.6	13.3	1.9	5.4	7.6	7.7	7.8	14.2	4.4	1.7
Prop In Lane	1.00		0.49	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	495	0	645	510	700	595	494	970	953	393	1940	868
V/C Ratio(X)	0.29	0.00	0.26	0.50	0.14	0.37	0.16	0.45	0.45	0.28	0.29	0.12
Avail Cap(c_a), veh/h	598	0	812	629	882	750	598	1207	1185	479	2414	1080
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	11.4	16.0	10.9	12.0	8.4	7.1	7.1	11.4	6.4	5.8
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.8	0.1	0.4	0.1	0.3	0.3	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.7	3.4	1.0	2.4	0.7	3.8	3.8	1.2	2.2	0.8
LnGrp Delay(d),s/veh	13.6	0.0	11.6	16.7	11.0	12.3	8.6	7.5	7.5	11.8	6.5	5.8
LnGrp LOS	B		B	B	B	B	A	A	A	B	A	A
Approach Vol, veh/h		311			576			937			770	
Approach Delay, s/veh		12.5			14.0			7.6			7.1	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.9		21.8		30.9		21.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		9.8		9.3		16.2		15.3				
Green Ext Time (p_c), s		12.9		3.5		10.7		2.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				9.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary  
 27: Melrose & Crowther

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	274	145	64	250	57	228	369	49	9	232	36
Future Volume (veh/h)	33	274	145	64	250	57	228	369	49	9	232	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	288	153	67	263	60	240	388	52	9	244	38
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	583	496	174	619	527	248	1087	145	100	807	124
Arrive On Green	0.08	0.31	0.31	0.10	0.33	0.33	0.14	0.35	0.35	0.06	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3141	418	1774	3076	473
Grp Volume(v), veh/h	35	288	153	67	263	60	240	217	223	9	139	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1789	1774	1770	1779
Q Serve(g_s), s	0.8	5.4	3.1	1.5	4.7	1.1	5.8	3.9	4.0	0.2	2.7	2.8
Cycle Q Clear(g_c), s	0.8	5.4	3.1	1.5	4.7	1.1	5.8	3.9	4.0	0.2	2.7	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.27
Lane Grp Cap(c), veh/h	139	583	496	174	619	527	248	613	619	100	464	467
V/C Ratio(X)	0.25	0.49	0.31	0.39	0.42	0.11	0.97	0.35	0.36	0.09	0.30	0.31
Avail Cap(c_a), veh/h	248	1304	1108	248	1304	1108	248	1238	1252	248	1238	1245
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	12.0	11.2	18.1	11.1	9.9	18.3	10.4	10.5	19.2	12.7	12.7
Incr Delay (d2), s/veh	0.9	0.6	0.3	1.4	0.5	0.1	47.6	0.3	0.4	0.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	1.4	0.8	2.5	0.5	6.0	1.9	2.0	0.1	1.4	1.4
LnGrp Delay(d),s/veh	19.5	12.6	11.5	19.5	11.6	10.0	66.0	10.8	10.8	19.6	13.0	13.0
LnGrp LOS	B	B	B	B	B	B	E	B	B	B	B	B
Approach Vol, veh/h		476			390			680			291	
Approach Delay, s/veh		12.8			12.7			30.3			13.2	
Approach LOS		B			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	15.4	8.0	13.2	5.4	16.3	4.4	16.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	28.0	4.0	28.0	4.0	28.0				
Max Q Clear Time (g_c+1), s	4.0	7.4	7.8	4.8	2.8	6.7	2.2	6.0				
Green Ext Time (p_c), s	0.0	4.0	0.0	4.5	0.0	4.1	0.0	4.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			19.3									
HCM 2010 LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑↑↑		↖	↑↑	↗
Traffic Volume (veh/h)	87	114	42	0	164	206	78	1223	1	69	658	80
Future Volume (veh/h)	87	114	42	0	164	206	78	1223	1	69	658	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	92	120	44	0	173	217	82	1287	1	73	693	84
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	712	605	3	452	384	168	2184	2	157	1450	649
Arrive On Green	0.10	0.38	0.38	0.00	0.24	0.24	0.09	0.42	0.42	0.09	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5248	4	1774	3539	1583
Grp Volume(v), veh/h	92	120	44	0	173	217	82	831	457	73	693	84
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1862	1774	1770	1583
Q Serve(g_s), s	2.6	2.3	0.9	0.0	4.1	6.4	2.3	10.1	10.1	2.1	7.6	1.8
Cycle Q Clear(g_c), s	2.6	2.3	0.9	0.0	4.1	6.4	2.3	10.1	10.1	2.1	7.6	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	712	605	3	452	384	168	1411	775	157	1450	649
V/C Ratio(X)	0.51	0.17	0.07	0.00	0.38	0.57	0.49	0.59	0.59	0.47	0.48	0.13
Avail Cap(c_a), veh/h	201	1053	895	201	1053	895	201	1533	842	234	1667	746
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	10.8	10.4	0.0	16.8	17.6	22.8	12.0	12.0	23.0	11.5	9.8
Incr Delay (d2), s/veh	2.2	0.1	0.1	0.0	0.5	1.3	2.2	0.5	0.9	2.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	0.4	0.0	2.2	2.9	1.2	4.7	5.3	1.1	3.7	0.8
LnGrp Delay(d),s/veh	24.8	10.9	10.5	0.0	17.3	19.0	25.0	12.5	12.9	25.1	11.7	9.9
LnGrp LOS	C	B	B		B	B	C	B	B	C	B	A
Approach Vol, veh/h		256			390			1370			850	
Approach Delay, s/veh		15.8			18.2			13.4			12.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	22.3	7.0	23.7	7.4	14.9	6.7	24.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	28.0	4.0	23.0	4.0	28.0	5.0	22.0				
Max Q Clear Time (g_c+10), s	4.0	4.3	4.3	9.6	4.6	8.4	4.1	12.1				
Green Ext Time (p_c), s	0.0	2.6	0.0	10.1	0.0	2.5	0.0	7.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.1								
HCM 2010 LOS				B								





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗ ↘	↖ ↗ ↘		↖ ↗ ↘	↖ ↗ ↘	↖	↖	↖ ↗	↖	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	209	773	69	189	968	203	62	389	115	273	448	329
Future Volume (veh/h)	209	773	69	189	968	203	62	389	115	273	448	329
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	220	814	73	199	1019	0	65	409	121	287	472	346
Adj No. of Lanes	1	3	0	1	3	1	1	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	1732	155	187	1652	514	128	1129	505	363	688	503
Arrive On Green	0.15	0.36	0.36	0.11	0.32	0.00	0.07	0.32	0.32	0.11	0.35	0.35
Sat Flow, veh/h	1774	4754	424	1774	5085	1583	1774	3539	1583	3442	1953	1427
Grp Volume(v), veh/h	220	579	308	199	1019	0	65	409	121	287	428	390
Grp Sat Flow(s),veh/h/ln	1774	1695	1788	1774	1695	1583	1774	1770	1583	1721	1770	1611
Q Serve(g_s), s	9.2	9.9	10.0	8.0	12.8	0.0	2.7	6.7	4.3	6.2	15.6	15.7
Cycle Q Clear(g_c), s	9.2	9.9	10.0	8.0	12.8	0.0	2.7	6.7	4.3	6.2	15.6	15.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	257	1235	651	187	1652	514	128	1129	505	363	623	567
V/C Ratio(X)	0.85	0.47	0.47	1.06	0.62	0.00	0.51	0.36	0.24	0.79	0.69	0.69
Avail Cap(c_a), veh/h	257	1342	708	187	1811	564	140	1447	648	363	770	701
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	18.5	18.5	33.9	21.6	0.0	33.9	19.9	19.0	33.1	21.0	21.0
Incr Delay (d2), s/veh	23.4	0.3	0.5	83.4	0.5	0.0	3.1	0.2	0.2	11.2	1.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	4.6	5.1	8.2	6.0	0.0	1.4	3.3	1.9	3.5	7.9	7.3
LnGrp Delay(d),s/veh	55.0	18.7	19.0	117.3	22.2	0.0	36.9	20.1	19.3	44.3	22.9	23.1
LnGrp LOS	D	B	B	F	C		D	C	B	D	C	C
Approach Vol, veh/h		1107			1218			595			1105	
Approach Delay, s/veh		26.0			37.7			21.7			28.5	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	29.6	7.5	28.7	13.0	26.6	10.0	26.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	0.0	28.0	4.0	31.0	9.0	25.0	6.0	29.0				
Max Q Clear Time (g_c+110), s	0.0	12.0	4.7	17.7	11.2	14.8	8.2	8.7				
Green Ext Time (p_c), s	0.0	11.2	0.0	7.0	0.0	7.8	0.0	8.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				29.6								
HCM 2010 LOS				C								

HCM Signalized Intersection Capacity Analysis  
30: SR57 SB Ramp & Orangethorpe

2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	981	3	14	1059	428	5	5	12	190	2	241
Future Volume (vph)	280	981	3	14	1059	428	5	5	12	190	2	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	9	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5083		1770	5085	1583		1696	1425	1681	1520	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5083		1770	5085	1583		1696	1425	1681	1520	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	295	1033	3	15	1115	451	5	5	13	200	2	254
RTOR Reduction (vph)	0	0	0	0	0	171	0	0	12	0	189	0
Lane Group Flow (vph)	295	1036	0	15	1115	280	0	10	1	180	87	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	4.2	29.2		0.5	25.5	25.5		1.3	1.3	13.6	13.6	
Effective Green, g (s)	6.2	31.2		2.5	27.5	27.5		3.3	3.3	15.6	15.6	
Actuated g/C Ratio	0.10	0.51		0.04	0.45	0.45		0.05	0.05	0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	351	2616		73	2307	718		92	77	432	391	
v/s Ratio Prot	c0.09	0.20		0.01	c0.22			c0.01		c0.11	0.06	
v/s Ratio Perm						0.18			0.00			
v/c Ratio	0.84	0.40		0.21	0.48	0.39		0.11	0.01	0.42	0.22	
Uniform Delay, d1	26.7	9.0		28.1	11.6	11.0		27.3	27.1	18.7	17.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.4	0.1		1.4	0.2	0.4		0.5	0.0	0.7	0.3	
Delay (s)	43.1	9.1		29.5	11.7	11.3		27.8	27.2	19.4	18.0	
Level of Service	D	A		C	B	B		C	C	B	B	
Approach Delay (s)		16.6			11.8			27.4			18.6	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑			↑↑↑		↔↔			↔		
Traffic Volume (veh/h)	214	970	0	0	1261	493	194	0	744	0	0	0
Future Volume (veh/h)	214	970	0	0	1261	493	194	0	744	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	225	1021	0	0	1327	519	204	0	783			
Adj No. of Lanes	2	3	0	0	3	0	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	295	2179	0	0	1134	440	1770	0	814			
Arrive On Green	0.09	0.43	0.00	0.00	0.31	0.31	0.51	0.00	0.51			
Sat Flow, veh/h	3442	5253	0	0	3775	1399	3442	0	1583			
Grp Volume(v), veh/h	225	1021	0	0	1246	600	204	0	783			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1616	1721	0	1583			
Q Serve(g_s), s	4.5	10.0	0.0	0.0	22.0	22.0	2.1	0.0	33.3			
Cycle Q Clear(g_c), s	4.5	10.0	0.0	0.0	22.0	22.0	2.1	0.0	33.3			
Prop In Lane	1.00		0.00	0.00		0.87	1.00		1.00			
Lane Grp Cap(c), veh/h	295	2179	0	0	1065	508	1770	0	814			
V/C Ratio(X)	0.76	0.47	0.00	0.00	1.17	1.18	0.12	0.00	0.96			
Avail Cap(c_a), veh/h	295	2179	0	0	1065	508	1770	0	814			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	31.3	14.3	0.0	0.0	24.0	24.0	8.8	0.0	16.3			
Incr Delay (d2), s/veh	11.2	0.2	0.0	0.0	86.6	100.1	0.0	0.0	22.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	4.7	0.0	0.0	23.0	23.9	1.0	0.0	19.5			
LnGrp Delay(d),s/veh	42.5	14.5	0.0	0.0	110.6	124.1	8.8	0.0	38.9			
LnGrp LOS	D	B			F	F	A		D			
Approach Vol, veh/h		1246			1846			987				
Approach Delay, s/veh		19.5			115.0			32.7				
Approach LOS		B			F			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.0			8.0	24.0		38.0				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+11), s		12.0			6.5	24.0		35.3				
Green Ext Time (p_c), s		14.4			0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					65.9							
HCM 2010 LOS					E							

HCM 2010 Signalized Intersection Summary  
 32: Melrose & Orangethorpe
























2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘			↔ ↗ ↘			↕ ↗ ↘			↕ ↗ ↘		
Traffic Volume (veh/h)	108	1082	226	51	836	65	535	446	76	74	240	258
Future Volume (veh/h)	108	1082	226	51	836	65	535	446	76	74	240	258
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	114	1139	238	54	880	68	563	469	80	78	253	272
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1522	318	237	1662	128	272	1096	186	152	521	466
Arrive On Green	0.08	0.36	0.36	0.07	0.35	0.35	0.15	0.36	0.36	0.09	0.29	0.29
Sat Flow, veh/h	3442	4217	881	3442	4816	371	1774	3028	514	1774	1770	1583
Grp Volume(v), veh/h	114	916	461	54	619	329	563	273	276	78	253	272
Grp Sat Flow(s),veh/h/ln	1721	1695	1707	1721	1695	1797	1774	1770	1772	1774	1770	1583
Q Serve(g_s), s	2.0	15.4	15.4	1.0	9.5	9.6	10.0	7.6	7.7	2.7	7.7	9.6
Cycle Q Clear(g_c), s	2.0	15.4	15.4	1.0	9.5	9.6	10.0	7.6	7.7	2.7	7.7	9.6
Prop In Lane	1.00		0.52	1.00		0.21	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	292	1224	616	237	1170	620	272	640	641	152	521	466
V/C Ratio(X)	0.39	0.75	0.75	0.23	0.53	0.53	2.07	0.43	0.43	0.51	0.49	0.58
Avail Cap(c_a), veh/h	316	1247	628	316	1247	661	272	841	842	163	732	655
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	18.3	18.3	28.7	17.1	17.1	27.6	15.7	15.7	28.5	19.0	19.6
Incr Delay (d2), s/veh	0.9	2.5	4.9	0.5	0.4	0.7	494.5	0.5	0.5	2.7	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.5	8.0	0.5	4.5	4.9	42.2	3.8	3.8	1.5	3.8	4.3
LnGrp Delay(d),s/veh	29.1	20.8	23.1	29.2	17.5	17.8	522.1	16.2	16.2	31.2	19.7	20.8
LnGrp LOS	C	C	C	C	B	B	F	B	B	C	B	C
Approach Vol, veh/h	1491			1002			1112			603		
Approach Delay, s/veh	22.1			18.2			272.3			21.7		
Approach LOS	C			B			F			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	25.6	12.0	21.2	7.5	24.5	7.6	25.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+13), s	4.0	17.4	12.0	11.6	4.0	11.6	4.7	9.7				
Green Ext Time (p_c), s	0.0	4.1	0.0	5.7	0.0	8.8	0.0	6.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay	87.3											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary  
33: Kraemer & Orangethorpe

2040 Proposed GP PM  
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	762	220	88	465	40	328	1036	145	31	508	163
Future Volume (veh/h)	255	762	220	88	465	40	328	1036	145	31	508	163
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	268	802	232	93	489	42	345	1091	153	33	535	172
Adj No. of Lanes	1	2	1	1	3	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	1177	527	164	1544	131	249	1490	666	92	1176	526
Arrive On Green	0.10	0.33	0.33	0.09	0.32	0.32	0.14	0.42	0.42	0.05	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	4776	406	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	268	802	232	93	346	185	345	1091	153	33	535	172
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1791	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.0	15.3	9.0	3.9	6.0	6.1	11.0	20.2	4.9	1.4	9.3	6.4
Cycle Q Clear(g_c), s	8.0	15.3	9.0	3.9	6.0	6.1	11.0	20.2	4.9	1.4	9.3	6.4
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	1177	527	164	1096	579	249	1490	666	92	1176	526
V/C Ratio(X)	1.48	0.68	0.44	0.57	0.32	0.32	1.39	0.73	0.23	0.36	0.46	0.33
Avail Cap(c_a), veh/h	181	1355	606	408	1731	915	249	1626	728	181	1491	667
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	22.6	20.4	34.0	20.0	20.0	33.7	19.0	14.5	35.9	20.6	19.6
Incr Delay (d2), s/veh	242.9	1.2	0.6	3.0	0.2	0.3	196.2	1.6	0.2	2.4	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	7.7	4.0	2.1	2.9	3.1	18.9	10.2	2.1	0.7	4.6	2.8
LnGrp Delay(d),s/veh	278.1	23.7	21.0	37.1	20.1	20.3	229.9	20.6	14.7	38.3	20.9	20.0
LnGrp LOS	F	C	C	D	C	C	F	C	B	D	C	B
Approach Vol, veh/h		1302			624			1589			740	
Approach Delay, s/veh		75.6			22.7			65.5			21.4	
Approach LOS		E			C			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	28.1	13.0	28.0	10.0	27.3	6.0	35.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	28.0	9.0	31.0	6.0	38.0	6.0	34.0				
Max Q Clear Time (g_c+I1), s	5.9	17.3	13.0	11.3	10.0	8.1	3.4	22.2				
Green Ext Time (p_c), s	0.1	6.7	0.0	12.7	0.0	12.3	0.0	8.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			54.6									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis  
34: Miller/Crowther & Orangethorpe

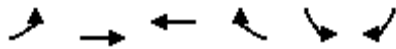
2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗↗		↘	↗↗↗	↗	↘	↗	↗	↘	↗	↗
Traffic Volume (vph)	3	761	67	48	385	94	154	262	158	82	84	1
Future Volume (vph)	3	761	67	48	385	94	154	262	158	82	84	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	9	12	12	12	12	12	12
Total Lost time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5024		1770	4746	1425	1681	1765	1583	1681	1762	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5024		1770	4746	1425	1681	1765	1583	1681	1762	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	3	875	77	55	443	108	177	301	182	94	97	1
RTOR Reduction (vph)	0	10	0	0	0	60	0	0	158	0	0	1
Lane Group Flow (vph)	3	942	0	55	443	48	159	319	24	85	106	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		7	7	
Permitted Phases						6			3			7
Actuated Green, G (s)	2.4	19.3		3.4	20.3	20.3	4.7	4.7	4.7	6.8	6.8	6.8
Effective Green, g (s)	4.4	21.3		5.4	22.3	22.3	6.7	6.7	6.7	8.8	8.8	8.8
Actuated g/C Ratio	0.09	0.42		0.11	0.44	0.44	0.13	0.13	0.13	0.18	0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Lane Grp Cap (vph)	155	2131		190	2108	633	224	235	211	294	308	277
v/s Ratio Prot	0.00	c0.19		c0.03	0.09		0.09	c0.18		0.05	c0.06	
v/s Ratio Perm						0.03			0.02			0.00
v/c Ratio	0.02	0.44		0.29	0.21	0.08	0.71	1.36	0.12	0.29	0.34	0.00
Uniform Delay, d1	20.9	10.2		20.6	8.6	8.0	20.8	21.8	19.1	18.0	18.2	17.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1		0.8	0.0	0.1	9.9	186.0	0.2	0.5	0.7	0.0
Delay (s)	21.0	10.4		21.5	8.6	8.1	30.7	207.8	19.4	18.5	18.8	17.1
Level of Service	C	B		C	A	A	C	F	B	B	B	B
Approach Delay (s)		10.4			9.7			113.2			18.7	
Approach LOS		B			A			F			B	

Intersection Summary
















HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖	↗↗↗	↖↖↖		↘↘	↘		
Traffic Volume (veh/h)	69	932	495	555	379	32		
Future Volume (veh/h)	69	932	495	555	379	32		
Number	5	2	6	16	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	73	981	521	584	399	34		
Adj No. of Lanes	1	3	3	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	170	3523	1877	877	759	349		
Arrive On Green	0.10	0.69	0.55	0.55	0.22	0.22		
Sat Flow, veh/h	1774	5253	3558	1583	3442	1583		
Grp Volume(v), veh/h	73	981	521	584	399	34		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1721	1583		
Q Serve(g_s), s	1.8	3.4	3.7	12.1	4.7	0.8		
Cycle Q Clear(g_c), s	1.8	3.4	3.7	12.1	4.7	0.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	170	3523	1877	877	759	349		
V/C Ratio(X)	0.43	0.28	0.28	0.67	0.53	0.10		
Avail Cap(c_a), veh/h	230	3960	2053	959	2233	1027		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.7	2.7	5.4	7.3	15.9	14.3		
Incr Delay (d2), s/veh	1.7	0.0	0.1	1.6	0.6	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.0	1.6	1.8	5.6	2.3	0.4		
LnGrp Delay(d),s/veh	21.4	2.7	5.5	8.9	16.4	14.5		
LnGrp LOS	C	A	A	A	B	B		
Approach Vol, veh/h		1054	1105		433			
Approach Delay, s/veh		4.0	7.3		16.3			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		34.0			6.4	27.6		12.2
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		34.0			4.0	26.0		28.0
Max Q Clear Time (g_c+I1), s		5.4			3.8	14.1		6.7
Green Ext Time (p_c), s		18.7			0.0	9.5		1.5
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay				7.5				
HCM 2010 LOS				A				

HCM Signalized Intersection Capacity Analysis  
36: Del Cerro Drive & Rose

2040 Proposed GP PM  
07/12/2018

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	86	173	1460	169	68	1074
Future Volume (vph)	86	173	1460	169	68	1074
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.93	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3263	1441	3539	1583	1770	3539
Flt Permitted	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3263	1441	3539	1583	1770	3539
Peak-hour factor, PHF	0.92	0.95	0.92	0.92	0.95	0.92
Adj. Flow (vph)	93	182	1587	184	72	1167
RTOR Reduction (vph)	81	81	0	55	0	0
Lane Group Flow (vph)	103	10	1587	129	72	1167
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	3.6	3.6	34.2	34.2	2.0	40.2
Effective Green, g (s)	5.6	5.6	36.2	36.2	4.0	42.2
Actuated g/C Ratio	0.11	0.11	0.70	0.70	0.08	0.81
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	352	155	2473	1106	136	2883
v/s Ratio Prot	c0.03		c0.45		c0.04	0.33
v/s Ratio Perm		0.01		0.08		
v/c Ratio	0.29	0.06	0.64	0.12	0.53	0.40
Uniform Delay, d1	21.3	20.7	4.3	2.6	23.0	1.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.6	0.0	3.7	0.1
Delay (s)	21.7	20.9	4.8	2.6	26.7	1.4
Level of Service	C	C	A	A	C	A
Approach Delay (s)	21.5		4.6			2.9
Approach LOS	C		A			A

Intersection Summary

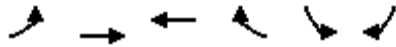
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



HCM 2010 Signalized Intersection Summary  
 37: Orangethorpe & Del Cerro Drive

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	↖ ↗	↑ ↑ ↑	↑ ↑ ↗		↖	↗ ↘		
Traffic Volume (veh/h)	156	1043	569	106	97	146		
Future Volume (veh/h)	156	1043	569	106	97	146		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	170	1134	618	115	105	159		
Adj No. of Lanes	2	3	3	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	476	3651	2283	419	317	498		
Arrive On Green	0.14	0.72	0.53	0.53	0.18	0.18		
Sat Flow, veh/h	3442	5253	4488	792	1774	2787		
Grp Volume(v), veh/h	170	1134	483	250	105	159		
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1723	1774	1393		
Q Serve(g_s), s	1.7	3.1	3.0	3.1	2.0	1.9		
Cycle Q Clear(g_c), s	1.7	3.1	3.0	3.1	2.0	1.9		
Prop In Lane	1.00			0.46	1.00	1.00		
Lane Grp Cap(c), veh/h	476	3651	1791	910	317	498		
V/C Ratio(X)	0.36	0.31	0.27	0.27	0.33	0.32		
Avail Cap(c_a), veh/h	621	4852	2448	1244	1784	2803		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.1	2.0	5.0	5.0	13.9	13.9		
Incr Delay (d2), s/veh	0.5	0.0	0.1	0.2	0.6	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	1.4	1.4	1.5	1.0	1.6		
LnGrp Delay(d),s/veh	15.6	2.0	5.1	5.2	14.5	14.2		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		1304	733		264			
Approach Delay, s/veh		3.8	5.1		14.3			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				29.8		8.9	7.4	22.5
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				35.0		37.0	5.0	26.0
Max Q Clear Time (g_c+I1), s				5.1		4.0	3.7	5.1
Green Ext Time (p_c), s				16.7		0.9	0.1	13.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			5.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary  
 38: Jefferson & Orangethorpe

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↗		↖	↗	↖
Traffic Volume (veh/h)	97	1076	57	28	721	51	51	258	84	45	63	57
Future Volume (veh/h)	97	1076	57	28	721	51	51	258	84	45	63	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	102	1133	60	29	759	54	54	272	88	47	66	60
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	1681	89	114	1579	678	141	573	181	134	396	337
Arrive On Green	0.11	0.49	0.49	0.06	0.45	0.45	0.08	0.22	0.22	0.08	0.21	0.21
Sat Flow, veh/h	1774	3419	181	1774	3539	1520	1774	2646	838	1774	1863	1583
Grp Volume(v), veh/h	102	586	607	29	759	54	54	180	180	47	66	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1831	1774	1770	1520	1774	1770	1715	1774	1863	1583
Q Serve(g_s), s	2.9	13.3	13.3	0.8	8.0	1.1	1.5	4.7	4.8	1.3	1.5	1.6
Cycle Q Clear(g_c), s	2.9	13.3	13.3	0.8	8.0	1.1	1.5	4.7	4.8	1.3	1.5	1.6
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	194	870	900	114	1579	678	141	383	371	134	396	337
V/C Ratio(X)	0.52	0.67	0.67	0.25	0.48	0.08	0.38	0.47	0.49	0.35	0.17	0.18
Avail Cap(c_a), veh/h	202	941	974	202	1883	809	202	908	880	202	956	812
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	10.2	10.2	23.4	10.3	8.4	23.0	18.0	18.1	23.1	16.9	17.0
Incr Delay (d2), s/veh	2.3	1.7	1.7	1.2	0.2	0.0	1.7	0.9	1.0	1.5	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.8	7.0	0.4	3.8	0.5	0.8	2.3	2.4	0.7	0.8	0.7
LnGrp Delay(d),s/veh	24.4	11.9	11.9	24.6	10.5	8.4	24.7	18.9	19.0	24.6	17.1	17.2
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		1295			842			414			173	
Approach Delay, s/veh		12.9			10.9			19.7			19.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	27.9	6.2	13.2	7.8	25.5	6.0	13.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	4.0	25.0	4.0	26.0	4.0	25.0				
Max Q Clear Time (g_c+1/2), s	11.8	15.3	3.5	3.6	4.9	10.0	3.3	6.8				
Green Ext Time (p_c), s	0.0	8.3	0.0	2.7	0.0	11.5	0.0	2.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
 39: Van Buren & Orangethorpe

2040 Proposed GP PM  
 07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	140	1007	59	32	683	57	55	173	73	50	93	62
Future Volume (veh/h)	140	1007	59	32	683	57	55	173	73	50	93	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1788	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	147	1007	62	34	719	60	58	182	77	53	98	65
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	1585	98	128	1469	631	153	392	333	149	387	329
Arrive On Green	0.12	0.47	0.47	0.07	0.42	0.42	0.09	0.21	0.21	0.08	0.21	0.21
Sat Flow, veh/h	1774	3387	209	1774	3539	1520	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	147	526	543	34	719	60	58	182	77	53	98	65
Grp Sat Flow(s),veh/h/ln	1774	1770	1826	1774	1770	1520	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.8	10.8	10.8	0.9	7.2	1.2	1.5	4.1	1.9	1.4	2.1	1.6
Cycle Q Clear(g_c), s	3.8	10.8	10.8	0.9	7.2	1.2	1.5	4.1	1.9	1.4	2.1	1.6
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	828	854	128	1469	631	153	392	333	149	387	329
V/C Ratio(X)	0.67	0.64	0.64	0.27	0.49	0.10	0.38	0.46	0.23	0.36	0.25	0.20
Avail Cap(c_a), veh/h	221	828	854	332	1837	789	221	1161	986	221	1161	986
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	9.7	9.7	21.1	10.3	8.6	20.8	16.6	15.8	20.8	16.0	15.8
Incr Delay (d2), s/veh	7.3	1.6	1.6	1.1	0.3	0.1	1.5	0.9	0.4	1.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.6	5.8	0.5	3.5	0.5	0.8	2.2	0.9	0.7	1.1	0.7
LnGrp Delay(d),s/veh	27.4	11.3	11.3	22.2	10.6	8.6	22.3	17.5	16.1	22.3	16.3	16.1
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		1216			813			317			216	
Approach Delay, s/veh		13.2			10.9			18.0			17.7	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	24.5	6.2	12.0	8.0	22.0	6.0	12.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	20.0	4.0	28.0	4.0	23.0	4.0	28.0					
Max Q Clear Time (g_c+1/2g), s	12.8	3.5	4.1	5.8	9.2	3.4	6.1					
Green Ext Time (p_c), s	0.0	5.6	0.0	2.1	0.0	8.8	0.0	2.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
40: Richfield & Orangethorpe

2040 Proposed GP PM  
07/12/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	919	64	65	614	112	59	472	95	77	231	82
Future Volume (veh/h)	189	919	64	65	614	112	59	472	95	77	231	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1788	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	199	967	67	68	646	118	62	497	100	81	243	86
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	1386	620	144	1316	565	136	888	178	161	816	282
Arrive On Green	0.10	0.39	0.39	0.08	0.37	0.37	0.08	0.30	0.30	0.09	0.32	0.32
Sat Flow, veh/h	1774	3539	1583	1774	3539	1520	1774	2940	589	1774	2584	891
Grp Volume(v), veh/h	199	967	67	68	646	118	62	298	299	81	164	165
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1520	1774	1770	1759	1774	1770	1705
Q Serve(g_s), s	6.0	13.6	1.6	2.2	8.3	3.1	2.0	8.4	8.5	2.6	4.2	4.3
Cycle Q Clear(g_c), s	6.0	13.6	1.6	2.2	8.3	3.1	2.0	8.4	8.5	2.6	4.2	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.52
Lane Grp Cap(c), veh/h	179	1386	620	144	1316	565	136	535	531	161	559	539
V/C Ratio(X)	1.11	0.70	0.11	0.47	0.49	0.21	0.46	0.56	0.56	0.50	0.29	0.31
Avail Cap(c_a), veh/h	179	1489	666	179	1489	640	179	894	888	179	894	861
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	15.1	11.5	26.1	14.3	12.7	26.2	17.4	17.4	25.7	15.3	15.4
Incr Delay (d2), s/veh	100.1	1.3	0.1	2.4	0.3	0.2	2.4	0.9	0.9	2.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	6.8	0.7	1.2	4.1	1.4	1.1	4.2	4.2	1.4	2.1	2.1
LnGrp Delay(d),s/veh	126.8	16.5	11.6	28.5	14.6	12.9	28.6	18.3	18.4	28.2	15.6	15.7
LnGrp LOS	F	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1233			832			659			410	
Approach Delay, s/veh		34.0			15.5			19.3			18.1	
Approach LOS		C			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	25.3	6.6	20.8	8.0	24.1	7.4	19.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	4.0	28.0	4.0	23.0	4.0	28.0				
Max Q Clear Time (g_c+14), s	4.0	15.6	4.0	6.3	8.0	10.3	4.6	10.5				
Green Ext Time (p_c), s	0.0	5.7	0.0	5.9	0.0	8.8	0.0	5.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				23.9								
HCM 2010 LOS				C								

**Intersection**

Intersection Delay, s/veh 13.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	92	226	31	30	274	33	48	171	13	13	145	43
Future Vol, veh/h	92	226	31	30	274	33	48	171	13	13	145	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	97	238	33	32	288	35	51	180	14	14	153	45
Number of Lanes	1	2	0	1	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay	12.8	13.7	13.2	12.6
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	
Vol Left, %		36%	0%	100%	0%	0%	100%	0%	0%	15%	0%
Vol Thru, %		64%	87%	0%	100%	71%	0%	100%	73%	85%	63%
Vol Right, %		0%	13%	0%	0%	29%	0%	0%	27%	0%	37%
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane		134	99	92	151	106	30	183	124	86	116
LT Vol		48	0	92	0	0	30	0	0	13	0
Through Vol		86	86	0	151	75	0	183	91	73	73
RT Vol		0	13	0	0	31	0	0	33	0	43
Lane Flow Rate		141	104	97	159	112	32	192	131	90	122
Geometry Grp		8	8	8	8	8	8	8	8	8	8
Degree of Util (X)		0.303	0.216	0.211	0.324	0.222	0.069	0.394	0.261	0.194	0.251
Departure Headway (Hd)		7.767	7.493	7.858	7.347	7.139	7.886	7.375	7.185	7.772	7.432
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap		462	479	457	488	503	454	488	500	462	483
Service Time		5.519	5.244	5.606	5.095	4.887	5.634	5.123	4.933	5.525	5.185
HCM Lane V/C Ratio		0.305	0.217	0.212	0.326	0.223	0.07	0.393	0.262	0.195	0.253
HCM Control Delay		13.9	12.3	12.7	13.6	11.9	11.2	14.9	12.5	12.4	12.7
HCM Lane LOS		B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q		1.3	0.8	0.8	1.4	0.8	0.2	1.9	1	0.7	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	180	68	32	189	51	78	443	17	31	315	39
Future Volume (veh/h)	62	180	68	32	189	51	78	443	17	31	315	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	65	189	72	34	199	54	82	466	18	33	332	41
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	393	674	248	388	737	195	767	2241	86	696	2048	251
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1122	2534	933	1114	2770	733	1005	3475	134	908	3175	389
Grp Volume(v), veh/h	65	130	131	34	125	128	82	237	247	33	184	189
Grp Sat Flow(s),veh/h/ln	1122	1770	1698	1114	1770	1733	1005	1770	1839	908	1770	1794
Q Serve(g_s), s	2.2	2.6	2.8	1.1	2.5	2.6	1.6	2.5	2.5	0.7	1.9	1.9
Cycle Q Clear(g_c), s	4.8	2.6	2.8	3.9	2.5	2.6	3.5	2.5	2.5	3.2	1.9	1.9
Prop In Lane	1.00		0.55	1.00		0.42	1.00		0.07	1.00		0.22
Lane Grp Cap(c), veh/h	393	471	452	388	471	461	767	1141	1186	696	1141	1157
V/C Ratio(X)	0.17	0.28	0.29	0.09	0.27	0.28	0.11	0.21	0.21	0.05	0.16	0.16
Avail Cap(c_a), veh/h	769	1063	1020	761	1063	1041	767	1141	1186	696	1141	1157
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	13.1	13.1	14.7	13.0	13.1	3.9	3.3	3.3	3.9	3.2	3.2
Incr Delay (d2), s/veh	0.2	0.3	0.4	0.1	0.3	0.3	0.3	0.4	0.4	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.3	1.3	0.4	1.3	1.3	0.5	1.3	1.4	0.2	1.0	1.0
LnGrp Delay(d),s/veh	15.2	13.4	13.5	14.8	13.3	13.4	4.1	3.7	3.7	4.1	3.5	3.5
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		326			287			566			406	
Approach Delay, s/veh		13.8			13.5			3.7			3.5	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		14.0		31.0		14.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		27.0		25.0		27.0		25.0				
Max Q Clear Time (g_c+I1), s		5.5		6.8		5.2		5.9				
Green Ext Time (p_c), s		5.7		3.1		5.7		3.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				7.5								
HCM 2010 LOS				A								

# **APPENDIX I – CURRENT GENERAL PLAN INTERSECTION OPERATIONS ANALYSIS WORKSHEETS, WITH IMPROVEMENTS**

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Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.921
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #13 Kraemer and Morse

Cycle (sec): 100 Critical Vol./Cap.(X): 0.690
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, and Crit Moves.



Level Of Service Computation Report

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

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.745
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

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 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.912
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 94 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #13 Kraemer and Morse

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

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

Intersection #15 Palm and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.610
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, Crit Moves.

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.711
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, Lanes.

Volume Module table with 12 columns and 14 rows 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, FinalVolume, OvlAdjVol.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 4 rows including Vol/Sat, OvlAdjV/S, Crit Moves.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.704
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 10 rows of volume and adjustment data.

Saturation Flow Module table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows showing Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.820
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 10 rows of volume and adjustment data.

Saturation Flow Module table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows showing Vol/Sat, Crit Moves, and asterisks.

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial























Current GP w/ Mitigation - AM Peak Hour  
07/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1627	333	276	1449	619	278	192	165	913	663	32
Future Volume (veh/h)	38	1627	333	276	1449	619	278	192	165	913	663	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	40	1713	351	291	1525	652	293	202	174	961	698	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	1619	328	328	2175	1030	365	763	341	766	1176	0
Arrive On Green	0.05	0.38	0.38	0.10	0.43	0.43	0.11	0.22	0.22	0.22	0.33	0.00
Sat Flow, veh/h	1774	4242	859	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	40	1365	699	291	1525	652	293	202	174	961	698	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1711	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	2.1	36.0	36.0	7.9	23.1	23.1	7.8	4.5	9.1	21.0	15.5	0.0
Cycle Q Clear(g_c), s	2.1	36.0	36.0	7.9	23.1	23.1	7.8	4.5	9.1	21.0	15.5	0.0
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	87	1294	653	328	2175	1030	365	763	341	766	1176	0
V/C Ratio(X)	0.46	1.06	1.07	0.89	0.70	0.63	0.80	0.26	0.51	1.25	0.59	0.00
Avail Cap(c_a), veh/h	150	1294	653	328	2175	1030	365	1350	604	766	1763	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.6	29.2	29.2	42.2	22.1	9.8	41.2	30.8	32.6	36.7	26.2	0.0
Incr Delay (d2), s/veh	3.7	41.0	55.5	23.9	1.0	1.3	12.2	0.2	1.2	125.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	24.1	26.9	4.9	10.9	10.3	4.4	2.2	4.1	23.2	7.6	0.0
LnGrp Delay(d),s/veh	47.3	70.2	84.7	66.1	23.1	11.1	53.4	31.0	33.8	161.8	26.7	0.0
LnGrp LOS	D	F	F	E	C	B	D	C	C	F	C	
Approach Vol, veh/h		2104			2468			669			1659	
Approach Delay, s/veh		74.6			25.0			41.5			105.0	
Approach LOS		E			C			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	38.0	12.0	33.3	6.6	42.4	23.0	22.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	34.0	8.0	45.0	6.0	35.0	19.0	34.0				
Max Q Clear Time (g_c+I1), s	9.9	38.0	9.8	17.5	4.1	25.1	23.0	11.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	7.7	0.0	9.7	0.0	7.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			60.9									
HCM 2010 LOS			E									

HCM 2010 Signalized Intersection Summary  
13: Kraemer & Morse
























Current GP w/ Mitigation - AM Peak Hour

07/24/2018
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	54	12	277	23	132	3	723	194	65	1347	16
Future Volume (veh/h)	26	54	12	277	23	132	3	723	194	65	1347	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	57	13	292	24	139	3	761	204	68	1418	17
Adj No. of Lanes	0	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	445	557	574	84	485	79	1535	687	161	1698	760
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.04	0.43	0.43	0.09	0.48	0.48
Sat Flow, veh/h	389	1267	1583	1325	238	1381	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	84	0	13	292	0	163	3	761	204	68	1418	17
Grp Sat Flow(s),veh/h/ln	1657	0	1583	1325	0	1619	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.3	9.3	0.0	3.5	0.1	7.5	4.1	1.8	16.8	0.3
Cycle Q Clear(g_c), s	1.5	0.0	0.3	10.8	0.0	3.5	0.1	7.5	4.1	1.8	16.8	0.3
Prop In Lane	0.32		1.00	1.00		0.85	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	681	0	557	574	0	569	79	1535	687	161	1698	760
V/C Ratio(X)	0.12	0.00	0.02	0.51	0.00	0.29	0.04	0.50	0.30	0.42	0.83	0.02
Avail Cap(c_a), veh/h	1108	0	981	930	0	1004	220	1682	752	220	1698	760
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	10.3	14.3	0.0	11.3	22.1	9.9	8.9	20.8	10.9	6.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.7	0.0	0.3	0.2	0.2	0.2	1.7	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.1	3.4	0.0	1.6	0.0	3.6	1.8	0.9	9.0	0.1
LnGrp Delay(d),s/veh	10.7	0.0	10.3	15.0	0.0	11.6	22.3	10.1	9.2	22.6	14.7	6.6
LnGrp LOS	B		B	B		B	C	B	A	C	B	A
Approach Vol, veh/h		97			455			968			1503	
Approach Delay, s/veh		10.7			13.8			10.0			15.0	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	4.2	25.2		19.0	6.4	23.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		3.5	2.1	18.8		12.8	3.8	9.5				
Green Ext Time (p_c), s		2.6	0.0	2.0		2.3	0.0	9.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			13.1									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary  
15: Rose & Palm

Current GP w/ Mitigation - AM Peak Hour  
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	2	635	15	12	9	347	833	7	4	1360	58
Future Volume (veh/h)	60	2	635	15	12	9	347	833	7	4	1360	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1824
Adj Flow Rate, veh/h	63	2	668	16	13	9	365	877	7	4	1432	61
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	565	662	926	260	193	540	406	1924	827	50	1716	73
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.23	0.54	0.54	0.03	0.34	0.34
Sat Flow, veh/h	1384	1863	1583	542	543	1520	1774	3539	1520	1774	5002	213
Grp Volume(v), veh/h	63	2	668	29	0	9	365	877	7	4	971	522
Grp Sat Flow(s),veh/h/ln	1384	1863	1583	1084	0	1520	1774	1770	1520	1774	1695	1825
Q Serve(g_s), s	2.6	0.1	25.1	0.0	0.0	0.3	16.6	12.5	0.2	0.2	21.9	21.9
Cycle Q Clear(g_c), s	3.4	0.1	25.1	0.8	0.0	0.3	16.6	12.5	0.2	0.2	21.9	21.9
Prop In Lane	1.00		1.00	0.55		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	565	662	926	453	0	540	406	1924	827	50	1163	626
V/C Ratio(X)	0.11	0.00	0.72	0.06	0.00	0.02	0.90	0.46	0.01	0.08	0.83	0.83
Avail Cap(c_a), veh/h	573	674	936	459	0	550	406	1924	827	128	1227	660
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	17.2	12.4	17.5	0.0	17.3	31.0	11.5	8.7	39.2	25.1	25.1
Incr Delay (d2), s/veh	0.1	0.0	2.7	0.1	0.0	0.0	22.1	0.2	0.0	0.7	4.9	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	11.5	0.4	0.0	0.1	10.6	6.1	0.1	0.1	10.9	12.4
LnGrp Delay(d),s/veh	18.7	17.2	15.1	17.6	0.0	17.3	53.1	11.6	8.7	39.9	30.0	33.8
LnGrp LOS	B	B	B	B		B	D	B	A	D	C	C
Approach Vol, veh/h		733			38			1249			1497	
Approach Delay, s/veh		15.4			17.5			23.7			31.4	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.5	21.0	30.4		31.5	4.4	47.1				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		27.1	18.6	23.9		2.8	2.2	14.5				
Green Ext Time (p_c), s		0.3	0.0	2.6		3.3	0.0	19.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.2									
HCM 2010 LOS			C									



























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	428	315	191	554	70	225	385	147	67	1162	216
Future Volume (veh/h)	178	428	315	191	554	70	225	385	147	67	1162	216
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	187	451	332	201	583	74	237	405	155	71	1223	227
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1167	501	183	1121	482	299	1422	520	135	1608	299
Arrive On Green	0.12	0.33	0.33	0.10	0.32	0.32	0.09	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3673	1343	1774	4311	800
Grp Volume(v), veh/h	187	451	332	201	583	74	237	372	188	71	962	488
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1626	1774	1695	1722
Q Serve(g_s), s	8.1	7.6	14.5	8.0	10.4	2.7	6.2	5.8	6.2	3.0	19.2	19.2
Cycle Q Clear(g_c), s	8.1	7.6	14.5	8.0	10.4	2.7	6.2	5.8	6.2	3.0	19.2	19.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.46
Lane Grp Cap(c), veh/h	206	1167	501	183	1121	482	299	1313	630	135	1265	642
V/C Ratio(X)	0.91	0.39	0.66	1.10	0.52	0.15	0.79	0.28	0.30	0.53	0.76	0.76
Avail Cap(c_a), veh/h	206	1464	629	183	1418	609	299	1358	651	138	1314	667
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	19.9	22.2	34.7	21.6	19.0	17.1	16.3	16.4	34.4	21.2	21.2
Incr Delay (d2), s/veh	37.9	0.2	1.8	94.4	0.4	0.1	13.5	0.1	0.3	3.5	2.6	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.7	6.3	8.7	5.2	1.1	4.1	2.8	2.8	1.6	9.4	10.0
LnGrp Delay(d),s/veh	71.7	20.1	24.0	129.1	22.0	19.1	30.6	16.4	16.7	37.9	23.8	26.2
LnGrp LOS	E	C	C	F	C	B	C	B	B	D	C	C
Approach Vol, veh/h		970			858			797			1521	
Approach Delay, s/veh		31.4			46.8			20.7			25.2	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	27.5	9.0	30.9	11.0	26.5	7.9	32.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	10.0	16.5	8.2	21.2	10.1	12.4	5.0	8.2				
Green Ext Time (p_c), s	0.0	7.0	0.0	5.7	0.0	7.9	0.0	14.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe





















Current GP w/ Mitigation - AM Peak Hour

07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 		 			
Traffic Volume (veh/h)	174	1192	0	0	1133	239	266	0	589	0	0	0
Future Volume (veh/h)	174	1192	0	0	1133	239	266	0	589	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	183	1255	0	0	1193	252	280	0	620			
Adj No. of Lanes	2	3	0	0	3	0	2	0	2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	406	2953	0	0	1782	376	1173	0	950			
Arrive On Green	0.12	0.58	0.00	0.00	0.42	0.42	0.34	0.00	0.34			
Sat Flow, veh/h	3442	5253	0	0	4375	889	3442	0	2787			
Grp Volume(v), veh/h	183	1255	0	0	961	484	280	0	620			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1706	1721	0	1393			
Q Serve(g_s), s	2.5	7.0	0.0	0.0	11.6	11.6	3.0	0.0	9.6			
Cycle Q Clear(g_c), s	2.5	7.0	0.0	0.0	11.6	11.6	3.0	0.0	9.6			
Prop In Lane	1.00		0.00	0.00		0.52	1.00		1.00			
Lane Grp Cap(c), veh/h	406	2953	0	0	1436	722	1173	0	950			
V/C Ratio(X)	0.45	0.43	0.00	0.00	0.67	0.67	0.24	0.00	0.65			
Avail Cap(c_a), veh/h	406	2996	0	0	1465	737	2433	0	1970			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.9	5.9	0.0	0.0	11.8	11.8	12.0	0.0	14.2			
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.0	1.2	2.3	0.1	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	3.3	0.0	0.0	5.6	5.8	1.4	0.0	3.7			
LnGrp Delay(d),s/veh	21.7	6.0	0.0	0.0	13.0	14.1	12.1	0.0	15.0			
LnGrp LOS	C	A			B	B	B		B			
Approach Vol, veh/h		1438			1445			900				
Approach Delay, s/veh		8.0			13.4			14.1				
Approach LOS		A			B			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		31.6			8.0	23.6		19.4				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		9.0			4.5	13.6		11.6				
Green Ext Time (p_c), s		16.3			0.0	5.9		3.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				11.5								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
32: Melrose & Orangethorpe























Current GP w/ Mitigation - AM Peak Hour  
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	768	491	81	818	54	181	336	59	66	514	228
Future Volume (veh/h)	244	768	491	81	818	54	181	336	59	66	514	228
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	257	808	517	85	861	57	191	354	62	69	541	240
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	1200	561	264	1668	110	412	1126	195	139	790	350
Arrive On Green	0.09	0.35	0.35	0.08	0.34	0.34	0.12	0.37	0.37	0.08	0.33	0.33
Sat Flow, veh/h	3442	3390	1583	3442	4874	322	1774	3017	523	1774	2389	1057
Grp Volume(v), veh/h	257	808	517	85	598	320	191	206	210	69	400	381
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1806	1774	1770	1770	1774	1770	1676
Q Serve(g_s), s	5.0	13.7	21.2	1.6	9.6	9.6	4.2	5.6	5.7	2.5	13.3	13.3
Cycle Q Clear(g_c), s	5.0	13.7	21.2	1.6	9.6	9.6	4.2	5.6	5.7	2.5	13.3	13.3
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.30	1.00		0.63
Lane Grp Cap(c), veh/h	305	1200	561	264	1160	618	412	660	661	139	586	555
V/C Ratio(X)	0.84	0.67	0.92	0.32	0.52	0.52	0.46	0.31	0.32	0.50	0.68	0.69
Avail Cap(c_a), veh/h	305	1200	561	305	1200	639	460	809	810	157	705	668
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	18.6	21.0	29.6	17.8	17.8	12.6	15.1	15.1	30.0	19.6	19.6
Incr Delay (d2), s/veh	19.0	1.5	20.9	0.7	0.4	0.7	0.8	0.3	0.3	2.8	2.1	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	6.6	12.4	0.8	4.5	4.8	2.1	2.7	2.8	1.3	6.8	6.5
LnGrp Delay(d),s/veh	49.4	20.1	41.9	30.3	18.2	18.5	13.4	15.3	15.4	32.7	21.7	21.9
LnGrp LOS	D	C	D	C	B	B	B	B	B	C	C	C
Approach Vol, veh/h		1582			1003			607			850	
Approach Delay, s/veh		32.0			19.3			14.8			22.7	
Approach LOS		C			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	26.0	10.2	24.4	8.0	25.2	7.3	27.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	3.6	23.2	6.2	15.3	7.0	11.6	4.5	7.7				
Green Ext Time (p_c), s	0.0	0.0	0.1	5.1	0.0	8.7	0.0	8.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				24.3								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial

Current GP w/ Mitigation - PM Peak Hour























07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1574	267	163	1447	769	322	615	121	806	410	50
Future Volume (veh/h)	69	1574	267	163	1447	769	322	615	121	806	410	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	1657	281	172	1523	809	339	647	127	848	432	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1558	263	300	1885	915	340	960	430	713	1345	0
Arrive On Green	0.07	0.36	0.36	0.09	0.37	0.37	0.10	0.27	0.27	0.21	0.38	0.00
Sat Flow, veh/h	1774	4383	739	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	73	1279	659	172	1523	809	339	647	127	848	432	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1732	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.5	6.4	21.0	8.7	0.0
Cycle Q Clear(g_c), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.5	6.4	21.0	8.7	0.0
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	127	1205	616	300	1885	915	340	960	430	713	1345	0
V/C Ratio(X)	0.57	1.06	1.07	0.57	0.81	0.88	1.00	0.67	0.30	1.19	0.32	0.00
Avail Cap(c_a), veh/h	140	1205	616	306	1885	915	340	1258	563	713	1642	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.5	32.7	32.7	44.4	28.6	18.4	45.6	32.9	29.2	40.2	22.2	0.0
Incr Delay (d2), s/veh	4.6	44.1	56.4	2.5	2.7	10.2	48.2	0.9	0.4	98.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	24.1	26.7	2.4	13.2	21.9	7.0	8.2	2.9	19.7	4.3	0.0
LnGrp Delay(d),s/veh	50.2	76.7	89.1	46.9	31.4	28.7	93.8	33.8	29.6	138.7	22.3	0.0
LnGrp LOS	D	F	F	D	C	C	F	C	C	F	C	
Approach Vol, veh/h		2011			2504			1113			1280	
Approach Delay, s/veh		79.8			31.6			51.6			99.4	
Approach LOS		E			C			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	38.0	12.0	40.5	9.3	39.6	23.0	29.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	34.0	8.0	45.0	6.0	35.0	19.0	34.0				
Max Q Clear Time (g_c+I1), s	6.9	38.0	12.0	10.7	6.0	39.6	23.0	18.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.6	0.0	0.0	0.0	7.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				61.4								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary  
13: Kraemer & Morse
























Current GP w/ Mitigation - PM Peak Hour

07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	16	6	118	12	78	8	1277	151	75	915	26
Future Volume (veh/h)	16	16	6	118	12	78	8	1277	151	75	915	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	17	6	124	13	82	8	1344	159	79	963	27
Adj No. of Lanes	0	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	226	381	415	53	336	98	1820	814	184	1991	891
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.06	0.51	0.51	0.10	0.56	0.56
Sat Flow, veh/h	584	938	1583	1383	221	1395	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	34	0	6	124	0	95	8	1344	159	79	963	27
Grp Sat Flow(s),veh/h/ln	1522	0	1583	1383	0	1617	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.1	3.4	0.0	2.0	0.2	12.6	2.3	1.8	6.9	0.3
Cycle Q Clear(g_c), s	2.4	0.0	0.1	6.1	0.0	2.0	0.2	12.6	2.3	1.8	6.9	0.3
Prop In Lane	0.50		1.00	1.00		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	493	0	381	415	0	389	98	1820	814	184	1991	891
V/C Ratio(X)	0.07	0.00	0.02	0.30	0.00	0.24	0.08	0.74	0.20	0.43	0.48	0.03
Avail Cap(c_a), veh/h	1207	0	1120	1060	0	1144	251	1919	859	251	1991	891
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	0.0	12.3	15.8	0.0	13.0	19.0	8.1	5.6	17.8	5.6	4.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.3	0.3	1.5	0.1	1.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	1.4	0.0	0.9	0.1	6.3	1.0	0.9	3.4	0.1
LnGrp Delay(d),s/veh	12.5	0.0	12.3	16.2	0.0	13.3	19.4	9.5	5.7	19.4	5.8	4.1
LnGrp LOS	B		B	B		B	B	A	A	B	A	A
Approach Vol, veh/h		40			219			1511			1069	
Approach Delay, s/veh		12.5			14.9			9.2			6.7	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.5	4.4	25.9		12.5	6.4	23.8				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		4.4	2.2	8.9		8.1	3.8	14.6				
Green Ext Time (p_c), s		1.1	0.0	10.5		1.0	0.0	5.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			8.7									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary  
15: Rose & Palm

Current GP w/ Mitigation - PM Peak Hour  
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	4	563	5	5	8	452	1226	11	8	926	82
Future Volume (veh/h)	61	4	563	5	5	8	452	1226	11	8	926	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1788	1863	1863	1788	1863	1863	1824
Adj Flow Rate, veh/h	64	4	593	5	5	8	476	1291	12	8	975	86
Adj No. of Lanes	1	1	1	0	1	1	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	544	610	906	241	219	498	434	1987	853	60	1669	147
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.24	0.56	0.56	0.03	0.35	0.35
Sat Flow, veh/h	1395	1863	1583	524	670	1520	1774	3539	1520	1774	4760	419
Grp Volume(v), veh/h	64	4	593	10	0	8	476	1291	12	8	694	367
Grp Sat Flow(s),veh/h/ln	1395	1863	1583	1194	0	1520	1774	1770	1520	1774	1695	1789
Q Serve(g_s), s	2.5	0.1	19.9	0.0	0.0	0.3	19.0	19.5	0.3	0.3	13.0	13.0
Cycle Q Clear(g_c), s	2.8	0.1	19.9	0.3	0.0	0.3	19.0	19.5	0.3	0.3	13.0	13.0
Prop In Lane	1.00		1.00	0.50		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	544	610	906	460	0	498	434	1987	853	60	1189	627
V/C Ratio(X)	0.12	0.01	0.65	0.02	0.00	0.02	1.10	0.65	0.01	0.13	0.58	0.59
Avail Cap(c_a), veh/h	627	720	999	527	0	587	434	1987	853	137	1310	691
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	17.6	11.4	17.7	0.0	17.7	29.3	11.8	7.5	36.4	20.6	20.6
Incr Delay (d2), s/veh	0.1	0.0	1.4	0.0	0.0	0.0	71.8	0.8	0.0	1.0	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	8.9	0.1	0.0	0.1	17.8	9.7	0.1	0.2	6.2	6.6
LnGrp Delay(d),s/veh	18.7	17.6	12.7	17.7	0.0	17.7	101.1	12.5	7.5	37.4	21.1	21.7
LnGrp LOS	B	B	B	B		B	F	B	A	D	C	C
Approach Vol, veh/h		661			18			1779			1069	
Approach Delay, s/veh		13.3			17.7			36.2			21.4	
Approach LOS		B			B			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.4	21.0	29.2		27.4	4.6	45.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	17.0	28.0		28.0	4.0	41.0				
Max Q Clear Time (g_c+I1), s		21.9	21.0	15.0		2.3	2.3	21.5				
Green Ext Time (p_c), s		1.5	0.0	10.2		2.7	0.0	15.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			27.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
25: Kraemer & Chapman

Current GP w/ Mitigation - PM Peak Hour


















07/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	457	174	76	519	76	349	1019	145	83	536	205
Future Volume (veh/h)	212	457	174	76	519	76	349	1019	145	83	536	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	223	481	183	80	546	80	367	1073	153	87	564	216
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	1228	527	153	1063	457	361	1623	231	157	1263	471
Arrive On Green	0.13	0.35	0.35	0.09	0.30	0.30	0.10	0.36	0.36	0.09	0.35	0.35
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	4499	641	1774	3651	1362
Grp Volume(v), veh/h	223	481	183	80	546	80	367	808	418	87	523	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1750	1774	1695	1622
Q Serve(g_s), s	8.5	7.0	6.1	2.9	8.7	1.9	7.0	13.6	13.6	3.2	8.1	8.4
Cycle Q Clear(g_c), s	8.5	7.0	6.1	2.9	8.7	1.9	7.0	13.6	13.6	3.2	8.1	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.84
Lane Grp Cap(c), veh/h	235	1228	527	153	1063	457	361	1223	631	157	1173	561
V/C Ratio(X)	0.95	0.39	0.35	0.52	0.51	0.18	1.02	0.66	0.66	0.55	0.45	0.46
Avail Cap(c_a), veh/h	235	1669	717	209	1617	694	361	1549	799	157	1499	717
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	16.8	16.5	29.7	19.6	8.7	22.6	18.2	18.2	29.6	17.2	17.3
Incr Delay (d2), s/veh	44.2	0.2	0.4	2.8	0.4	0.2	51.4	0.7	1.4	4.2	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	3.4	2.6	1.5	4.2	1.0	8.5	6.4	6.7	1.8	3.8	3.8
LnGrp Delay(d),s/veh	73.4	17.0	16.8	32.4	20.0	8.9	74.0	18.9	19.6	33.9	17.4	17.8
LnGrp LOS	E	B	B	C	C	A	F	B	B	C	B	B
Approach Vol, veh/h		887			706			1593			867	
Approach Delay, s/veh		31.1			20.2			31.8			19.2	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	25.5	9.0	25.5	11.0	22.4	8.0	26.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	4.9	9.0	9.0	10.4	10.5	10.7	5.2	15.6				
Green Ext Time (p_c), s	0.0	8.2	0.0	5.2	0.0	7.7	0.0	6.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
 31: SR57 NB Ramp & Orangethorpe

Current GP w/ Mitigation - PM Peak Hour

07/24/2018



























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	947	0	0	1256	491	194	0	733	0	0	0
Future Volume (veh/h)	214	947	0	0	1256	491	194	0	733	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	225	997	0	0	1322	517	204	0	772			
Adj No. of Lanes	2	3	0	0	3	0	2	0	2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	375	2768	0	0	1440	558	1318	0	1067			
Arrive On Green	0.11	0.54	0.00	0.00	0.40	0.40	0.38	0.00	0.38			
Sat Flow, veh/h	3442	5253	0	0	3775	1399	3442	0	2787			
Grp Volume(v), veh/h	225	997	0	0	1242	597	204	0	772			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1616	1721	0	1393			
Q Serve(g_s), s	3.4	6.1	0.0	0.0	19.1	19.4	2.1	0.0	13.0			
Cycle Q Clear(g_c), s	3.4	6.1	0.0	0.0	19.1	19.4	2.1	0.0	13.0			
Prop In Lane	1.00		0.00	0.00		0.87	1.00		1.00			
Lane Grp Cap(c), veh/h	375	2768	0	0	1353	645	1318	0	1067			
V/C Ratio(X)	0.60	0.36	0.00	0.00	0.92	0.93	0.15	0.00	0.72			
Avail Cap(c_a), veh/h	375	2768	0	0	1353	645	2248	0	1821			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.4	7.1	0.0	0.0	15.7	15.8	11.1	0.0	14.5			
Incr Delay (d2), s/veh	2.7	0.1	0.0	0.0	10.1	19.4	0.1	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.8	2.9	0.0	0.0	10.7	12.1	1.0	0.0	5.1			
LnGrp Delay(d),s/veh	26.1	7.2	0.0	0.0	25.8	35.2	11.2	0.0	15.5			
LnGrp LOS	C	A			C	D	B		B			
Approach Vol, veh/h		1222			1839			976				
Approach Delay, s/veh		10.7			28.9			14.6				
Approach LOS		B			C			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.0			8.0	24.0		23.1				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		8.1			5.4	21.4		15.0				
Green Ext Time (p_c), s		17.5			0.0	0.0		4.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.9								
HCM 2010 LOS				B								



HCM 2010 Signalized Intersection Summary  
 32: Melrose & Orangethorpe

Current GP w/ Mitigation - PM Peak Hour

07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			 			 	
Traffic Volume (veh/h)	108	1048	226	51	829	65	535	446	76	74	240	258
Future Volume (veh/h)	108	1048	226	51	829	65	535	446	76	74	240	258
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	114	1103	238	54	873	68	563	469	80	78	253	272
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1508	325	237	1656	129	513	1098	186	152	521	467
Arrive On Green	0.08	0.36	0.36	0.07	0.34	0.34	0.15	0.36	0.36	0.09	0.29	0.29
Sat Flow, veh/h	3442	4190	904	3442	4813	374	1774	3028	514	1774	1770	1583
Grp Volume(v), veh/h	114	892	449	54	614	327	563	273	276	78	253	272
Grp Sat Flow(s),veh/h/ln	1721	1695	1703	1721	1695	1797	1774	1770	1772	1774	1770	1583
Q Serve(g_s), s	2.0	14.9	14.9	1.0	9.4	9.5	10.0	7.6	7.7	2.7	7.7	9.5
Cycle Q Clear(g_c), s	2.0	14.9	14.9	1.0	9.4	9.5	10.0	7.6	7.7	2.7	7.7	9.5
Prop In Lane	1.00		0.53	1.00		0.21	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	292	1220	613	237	1167	618	513	641	642	152	521	467
V/C Ratio(X)	0.39	0.73	0.73	0.23	0.53	0.53	1.10	0.43	0.43	0.51	0.49	0.58
Avail Cap(c_a), veh/h	317	1249	628	317	1249	662	513	842	843	163	734	656
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	18.1	18.1	28.7	17.1	17.1	17.4	15.7	15.7	28.5	18.9	19.6
Incr Delay (d2), s/veh	0.8	2.2	4.3	0.5	0.4	0.7	69.3	0.4	0.5	2.7	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.3	7.7	0.5	4.5	4.8	15.8	3.8	3.8	1.5	3.8	4.3
LnGrp Delay(d),s/veh	29.1	20.3	22.4	29.2	17.5	17.8	86.7	16.1	16.1	31.1	19.6	20.7
LnGrp LOS	C	C	C	C	B	B	F	B	B	C	B	C
Approach Vol, veh/h		1455			995			1112			603	
Approach Delay, s/veh		21.6			18.2			51.9			21.6	
Approach LOS		C			B			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	25.4	12.0	21.2	7.5	24.4	7.6	25.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	3.0	16.9	12.0	11.5	4.0	11.5	4.7	9.7				
Green Ext Time (p_c), s	0.0	4.5	0.0	5.7	0.0	8.8	0.0	6.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			28.9									
HCM 2010 LOS			C									

# **APPENDIX J – PROPOSED GENERAL PLAN INTERSECTION OPERATIONS ANALYSIS WORKSHEETS, WITH IMPROVEMENTS**

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Level Of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #3 Imperial and Rose  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.921  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 100 Level Of Service: E  
 \*\*\*\*\*

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:	Include			Include			Include			Ovl		
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:	2	0	2	0	1	1	0	1	0	2	0	3

Volume Module:  
 Base Vol: 278 192 165 913 663 32 38 1627 333 276 1449 619  
 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: 278 192 165 913 663 32 38 1627 333 276 1449 619  
 Added Vol: 0 7 0 0 -1 0 0 0 0 0 0 0  
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Initial Fut: 278 199 165 913 662 32 38 1627 333 276 1449 619  
 User 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  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 293 209 174 961 697 34 40 1713 351 291 1525 652  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 293 209 174 961 697 34 40 1713 351 291 1525 652  
 PCE 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  
 MLF 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  
 FinalVolume: 293 209 174 961 697 34 40 1713 351 291 1525 652  
 OvlAdjVol: 171

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 2.00 1.00 2.00 1.91 0.09 1.00 2.49 0.51 2.00 3.00 1.00  
 Final Sat.: 3417 3417 1708 3417 3259 158 1708 4254 871 3417 5125 1708

Capacity Analysis Module:  
 Vol/Sat: 0.09 0.06 0.10 0.28 0.21 0.21 0.02 0.40 0.40 0.09 0.30 0.38  
 OvlAdjV/S: 0.10  
 Crit Moves: \*\*\*\* \*\*

\*\*\*\*\*

Level Of Service Computation Report  
 ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #13 Kraemer and Morse  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.690  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 36 Level Of Service: B  
 \*\*\*\*\*

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			Permitted			Permitted		
Rights:	Include			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	2	0	1	0	0	1	0	1

Volume Module:  
 Base Vol: 3 723 194 65 1347 16 26 54 12 277 23 132  
 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: 3 723 194 65 1347 16 26 54 12 277 23 132  
 Added Vol: 0 6 0 0 -1 0 0 0 0 0 0 0  
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Initial Fut: 3 729 194 65 1346 16 26 54 12 277 23 132  
 User 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  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 3 767 204 68 1417 17 27 57 13 292 24 139  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 3 767 204 68 1417 17 27 57 13 292 24 139  
 PCE 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  
 MLF 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  
 FinalVolume: 3 767 204 68 1417 17 27 57 13 292 24 139

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 2.00 1.00 0.32 0.68 1.00 1.00 0.15 0.85  
 Final Sat.: 1700 3400 1700 1700 3400 1700 552 1148 1700 1700 252 1448

Capacity Analysis Module:  
 Vol/Sat: 0.00 0.23 0.12 0.04 0.42 0.01 0.02 0.05 0.01 0.17 0.10 0.10  
 Crit Moves: \*\*\*\* \*\*

\*\*\*\*\*

Level Of Service Computation Report

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

Intersection #25 Chapman and Kraemer

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.576
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns and 14 rows 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.

Saturation Flow Module table with 12 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows including Vol/Sat, Crit Moves, and asterisks.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and a summary row.

Level Of Service Computation Report

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

Intersection #3 Imperial and Rose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.912
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 94 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 11 columns and 14 rows 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 Final Volume.

Saturation Flow Module table with 11 columns and 4 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 11 columns and 3 rows including Vol/Sat, Crit Moves, and a summary row.

Level Of Service Computation Report

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

\*\*\*\*\*
Intersection #13 Kraemer and Morse
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic scenarios and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

\*\*\*\*\*
Intersection #25 Chapman and Kraemer
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.712
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic scenarios and 12 rows of metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows of metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 3 rows of metrics like Vol/Sat, Crit Moves.

Level Of Service Computation Report

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

Intersection #31 Orangethorpe and SR-57 NB Ramps

Cycle (sec): 100 Critical Vol./Cap.(X): 0.709
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and metrics.

Saturation Flow Module table with 12 columns representing saturation flow rates.

Capacity Analysis Module table with 12 columns representing capacity and critical moves.

Level Of Service Computation Report

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

Intersection #32 Orangethorpe and Melrose

Cycle (sec): 100 Critical Vol./Cap.(X): 0.827
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 58 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and metrics.

Saturation Flow Module table with 12 columns representing saturation flow rates.

Capacity Analysis Module table with 12 columns representing capacity and critical moves.

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial

Proposed GP w/ Mitigation - AM Peak Hour

07/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1627	333	276	1449	619	278	199	165	913	662	32
Future Volume (veh/h)	38	1627	333	276	1449	619	278	199	165	913	662	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	40	1713	351	291	1525	652	293	209	174	961	697	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	1618	328	328	2174	1029	365	765	342	766	1177	0
Arrive On Green	0.05	0.38	0.38	0.10	0.43	0.43	0.11	0.22	0.22	0.22	0.33	0.00
Sat Flow, veh/h	1774	4242	859	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	40	1365	699	291	1525	652	293	209	174	961	697	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1711	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	2.1	36.0	36.0	7.9	23.1	23.1	7.9	4.6	9.1	21.0	15.4	0.0
Cycle Q Clear(g_c), s	2.1	36.0	36.0	7.9	23.1	23.1	7.9	4.6	9.1	21.0	15.4	0.0
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	87	1293	653	328	2174	1029	365	765	342	766	1177	0
V/C Ratio(X)	0.46	1.06	1.07	0.89	0.70	0.63	0.80	0.27	0.51	1.26	0.59	0.00
Avail Cap(c_a), veh/h	150	1293	653	328	2174	1029	365	1350	604	766	1762	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.6	29.2	29.2	42.2	22.1	9.8	41.2	30.8	32.6	36.7	26.2	0.0
Incr Delay (d2), s/veh	3.7	41.2	55.7	24.0	1.0	1.3	12.3	0.2	1.2	125.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	24.1	27.0	4.9	10.9	10.3	4.4	2.3	4.1	23.2	7.6	0.0
LnGrp Delay(d),s/veh	47.3	70.4	84.9	66.2	23.1	11.1	53.5	31.0	33.8	162.1	26.7	0.0
LnGrp LOS	D	F	F	E	C	B	D	C	C	F	C	
Approach Vol, veh/h		2104			2468			676			1658	
Approach Delay, s/veh		74.8			25.0			41.5			105.2	
Approach LOS		E			C			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	38.0	12.0	33.4	6.6	42.4	23.0	22.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	34.0	8.0	45.0	6.0	35.0	19.0	34.0				
Max Q Clear Time (g_c+I1), s	9.9	38.0	9.9	17.4	4.1	25.1	23.0	11.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	7.7	0.0	9.7	0.0	7.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				61.0								
HCM 2010 LOS				E								
<b>Notes</b>												



























HCM 2010 Signalized Intersection Summary  
13: Kraemer & Morse































Proposed GP w/ Mitigation - AM Peak Hour

07/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	54	12	277	23	132	3	729	194	65	1346	16
Future Volume (veh/h)	26	54	12	277	23	132	3	729	194	65	1346	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	57	13	292	24	139	3	767	204	68	1417	17
Adj No. of Lanes	0	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	445	557	574	84	485	79	1535	687	161	1699	760
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.04	0.43	0.43	0.09	0.48	0.48
Sat Flow, veh/h	389	1267	1583	1325	238	1381	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	84	0	13	292	0	163	3	767	204	68	1417	17
Grp Sat Flow(s),veh/h/ln	1657	0	1583	1325	0	1619	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.3	9.3	0.0	3.5	0.1	7.6	4.1	1.8	16.8	0.3
Cycle Q Clear(g_c), s	1.5	0.0	0.3	10.8	0.0	3.5	0.1	7.6	4.1	1.8	16.8	0.3
Prop In Lane	0.32		1.00	1.00		0.85	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	681	0	557	574	0	569	79	1535	687	161	1699	760
V/C Ratio(X)	0.12	0.00	0.02	0.51	0.00	0.29	0.04	0.50	0.30	0.42	0.83	0.02
Avail Cap(c_a), veh/h	1107	0	981	929	0	1003	220	1681	752	220	1699	760
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	10.3	14.3	0.0	11.3	22.1	9.9	8.9	20.8	10.9	6.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.7	0.0	0.3	0.2	0.3	0.2	1.8	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.1	3.4	0.0	1.6	0.0	3.7	1.8	0.9	9.0	0.1
LnGrp Delay(d),s/veh	10.7	0.0	10.3	15.0	0.0	11.6	22.3	10.2	9.1	22.6	14.7	6.6
LnGrp LOS	B		B	B		B	C	B	A	C	B	A
Approach Vol, veh/h		97			455			974			1502	
Approach Delay, s/veh		10.7			13.8			10.0			14.9	
Approach LOS		B			B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	4.2	25.2		19.0	6.4	23.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		3.5	2.1	18.8		12.8	3.8	9.6				
Green Ext Time (p_c), s		2.6	0.0	2.1		2.3	0.0	9.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			13.0									
HCM 2010 LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	426	315	191	565	76	225	385	147	66	1162	216
Future Volume (veh/h)	178	426	315	191	565	76	225	385	147	66	1162	216
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	187	448	332	201	595	80	237	405	155	69	1223	227
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1169	502	183	1123	482	299	1426	522	133	1607	298
Arrive On Green	0.12	0.33	0.33	0.10	0.32	0.32	0.09	0.39	0.39	0.07	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	3673	1343	1774	4311	800
Grp Volume(v), veh/h	187	448	332	201	595	80	237	372	188	69	962	488
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1626	1774	1695	1722
Q Serve(g_s), s	8.1	7.5	14.5	8.0	10.7	2.9	6.2	5.8	6.2	2.9	19.2	19.2
Cycle Q Clear(g_c), s	8.1	7.5	14.5	8.0	10.7	2.9	6.2	5.8	6.2	2.9	19.2	19.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.46
Lane Grp Cap(c), veh/h	206	1169	502	183	1123	482	299	1317	631	133	1264	642
V/C Ratio(X)	0.91	0.38	0.66	1.10	0.53	0.17	0.79	0.28	0.30	0.52	0.76	0.76
Avail Cap(c_a), veh/h	206	1462	628	183	1417	608	299	1357	651	137	1313	667
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	19.9	22.2	34.7	21.7	19.0	17.1	16.3	16.4	34.5	21.3	21.3
Incr Delay (d2), s/veh	38.1	0.2	1.8	94.8	0.4	0.2	13.6	0.1	0.3	3.2	2.6	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.7	6.3	8.7	5.3	1.2	4.1	2.8	2.8	1.5	9.4	10.0
LnGrp Delay(d),s/veh	71.9	20.1	24.0	129.5	22.1	19.2	30.7	16.4	16.6	37.7	23.8	26.2
LnGrp LOS	E	C	C	F	C	B	C	B	B	D	C	C
Approach Vol, veh/h		967			876			797			1519	
Approach Delay, s/veh		31.5			46.5			20.7			25.2	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	27.6	9.0	30.9	11.0	26.6	7.8	32.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	10.0	16.5	8.2	21.2	10.1	12.7	4.9	8.2				
Green Ext Time (p_c), s	0.0	7.1	0.0	5.6	0.0	7.9	0.0	14.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.3									
HCM 2010 LOS			C									
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 		 			
Traffic Volume (veh/h)	174	1189	0	0	1156	250	266	0	587	0	0	0
Future Volume (veh/h)	174	1189	0	0	1156	250	266	0	587	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	183	1252	0	0	1217	263	280	0	618			
Adj No. of Lanes	2	3	0	0	3	0	2	0	2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	405	2957	0	0	1778	384	1170	0	948			
Arrive On Green	0.12	0.58	0.00	0.00	0.42	0.42	0.34	0.00	0.34			
Sat Flow, veh/h	3442	5253	0	0	4356	905	3442	0	2787			
Grp Volume(v), veh/h	183	1252	0	0	985	495	280	0	618			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1703	1721	0	1393			
Q Serve(g_s), s	2.5	7.0	0.0	0.0	12.0	12.0	3.0	0.0	9.6			
Cycle Q Clear(g_c), s	2.5	7.0	0.0	0.0	12.0	12.0	3.0	0.0	9.6			
Prop In Lane	1.00		0.00	0.00		0.53	1.00		1.00			
Lane Grp Cap(c), veh/h	405	2957	0	0	1439	723	1170	0	948			
V/C Ratio(X)	0.45	0.42	0.00	0.00	0.68	0.68	0.24	0.00	0.65			
Avail Cap(c_a), veh/h	405	2994	0	0	1464	735	2432	0	1969			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.9	5.9	0.0	0.0	11.9	11.9	12.1	0.0	14.3			
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.0	1.3	2.6	0.1	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	3.3	0.0	0.0	5.9	6.2	1.4	0.0	3.8			
LnGrp Delay(d),s/veh	21.7	6.0	0.0	0.0	13.2	14.5	12.2	0.0	15.0			
LnGrp LOS	C	A			B	B	B		B			
Approach Vol, veh/h		1435			1480			898				
Approach Delay, s/veh		8.0			13.6			14.1				
Approach LOS		A			B			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		31.6			8.0	23.6		19.3				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		9.0			4.5	14.0		11.6				
Green Ext Time (p_c), s		16.4			0.0	5.6		3.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				11.6								
HCM 2010 LOS				B								

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  			 		 	 	
Traffic Volume (veh/h)	244	763	491	81	852	54	181	336	59	66	514	228
Future Volume (veh/h)	244	763	491	81	852	54	181	336	59	66	514	228
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	257	803	517	85	897	57	191	354	62	69	541	240
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	1200	561	264	1673	106	412	1126	195	139	790	350
Arrive On Green	0.09	0.35	0.35	0.08	0.34	0.34	0.12	0.37	0.37	0.08	0.33	0.33
Sat Flow, veh/h	3442	3390	1583	3442	4888	310	1774	3017	523	1774	2389	1057
Grp Volume(v), veh/h	257	803	517	85	621	333	191	206	210	69	400	381
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1808	1774	1770	1770	1774	1770	1676
Q Serve(g_s), s	5.0	13.6	21.2	1.6	10.0	10.1	4.2	5.6	5.7	2.5	13.3	13.3
Cycle Q Clear(g_c), s	5.0	13.6	21.2	1.6	10.0	10.1	4.2	5.6	5.7	2.5	13.3	13.3
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.30	1.00		0.63
Lane Grp Cap(c), veh/h	305	1200	561	264	1160	619	412	660	661	139	586	555
V/C Ratio(X)	0.84	0.67	0.92	0.32	0.54	0.54	0.46	0.31	0.32	0.50	0.68	0.69
Avail Cap(c_a), veh/h	305	1200	561	305	1200	640	460	809	810	157	705	668
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	18.5	21.0	29.6	18.0	18.0	12.6	15.1	15.1	30.0	19.6	19.6
Incr Delay (d2), s/veh	19.0	1.4	20.9	0.7	0.4	0.8	0.8	0.3	0.3	2.8	2.1	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	6.6	12.4	0.8	4.7	5.1	2.1	2.7	2.8	1.3	6.8	6.5
LnGrp Delay(d),s/veh	49.4	20.0	41.9	30.3	18.4	18.8	13.4	15.3	15.4	32.7	21.7	21.9
LnGrp LOS	D	B	D	C	B	B	B	B	B	C	C	C
Approach Vol, veh/h		1577			1039			607			850	
Approach Delay, s/veh		32.0			19.5			14.8			22.7	
Approach LOS		C			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	26.0	10.2	24.4	8.0	25.2	7.3	27.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	3.6	23.2	6.2	15.3	7.0	12.1	4.5	7.7				
Green Ext Time (p_c), s	0.0	0.0	0.1	5.1	0.0	8.4	0.0	8.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				24.3								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
3: Rose & Imperial























Proposed GP w/ Mitigation - PM Peak Hour
























07/24/2018

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1574	267	163	1447	769	322	617	121	806	417	50
Future Volume (veh/h)	69	1574	267	163	1447	769	322	617	121	806	417	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	1657	281	172	1523	809	339	649	127	848	439	0
Adj No. of Lanes	1	3	0	2	3	1	2	2	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1556	262	299	1883	914	339	963	431	713	1347	0
Arrive On Green	0.07	0.35	0.35	0.09	0.37	0.37	0.10	0.27	0.27	0.21	0.38	0.00
Sat Flow, veh/h	1774	4383	739	3442	5085	1583	3442	3539	1583	3442	3632	0
Grp Volume(v), veh/h	73	1279	659	172	1523	809	339	649	127	848	439	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1732	1721	1695	1583	1721	1770	1583	1721	1770	0
Q Serve(g_s), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.6	6.4	21.0	8.9	0.0
Cycle Q Clear(g_c), s	4.0	36.0	36.0	4.9	27.3	37.6	10.0	16.6	6.4	21.0	8.9	0.0
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	127	1203	615	299	1883	914	339	963	431	713	1347	0
V/C Ratio(X)	0.57	1.06	1.07	0.57	0.81	0.88	1.00	0.67	0.29	1.19	0.33	0.00
Avail Cap(c_a), veh/h	140	1203	615	305	1883	914	339	1256	562	713	1640	0
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	32.7	32.7	44.5	28.7	18.5	45.7	32.9	29.2	40.2	22.2	0.0
Incr Delay (d2), s/veh	4.7	44.4	56.8	2.5	2.7	10.3	48.5	0.9	0.4	99.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	24.1	26.8	2.4	13.2	21.9	7.0	8.2	2.9	19.7	4.4	0.0
LnGrp Delay(d),s/veh	50.2	77.2	89.5	47.0	31.4	28.9	94.2	33.8	29.6	139.3	22.4	0.0
LnGrp LOS	D	F	F	D	C	C	F	C	C	F	C	
Approach Vol, veh/h		2011			2504			1115			1287	
Approach Delay, s/veh		80.2			31.7			51.7			99.4	
Approach LOS		F			C			D			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	38.0	12.0	40.6	9.3	39.6	23.0	29.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	34.0	8.0	45.0	6.0	35.0	19.0	34.0				
Max Q Clear Time (g_c+I1), s	6.9	38.0	12.0	10.9	6.0	39.6	23.0	18.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.7	0.0	0.0	0.0	7.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				61.6								
HCM 2010 LOS				E								
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
13: Kraemer & Morse

Proposed GP w/ Mitigation - PM Peak Hour  
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	16	6	118	12	78	8	1278	151	75	921	26
Future Volume (veh/h)	16	16	6	118	12	78	8	1278	151	75	921	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	17	6	124	13	82	8	1345	159	79	969	27
Adj No. of Lanes	0	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	226	381	415	53	336	98	1821	814	184	1991	891
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.06	0.51	0.51	0.10	0.56	0.56
Sat Flow, veh/h	584	938	1583	1383	221	1395	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	34	0	6	124	0	95	8	1345	159	79	969	27
Grp Sat Flow(s),veh/h/ln	1522	0	1583	1383	0	1617	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.1	3.4	0.0	2.0	0.2	12.6	2.3	1.8	7.0	0.3
Cycle Q Clear(g_c), s	2.4	0.0	0.1	6.1	0.0	2.0	0.2	12.6	2.3	1.8	7.0	0.3
Prop In Lane	0.50		1.00	1.00		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	493	0	381	415	0	389	98	1821	814	184	1991	891
V/C Ratio(X)	0.07	0.00	0.02	0.30	0.00	0.24	0.08	0.74	0.20	0.43	0.49	0.03
Avail Cap(c_a), veh/h	1207	0	1120	1060	0	1143	251	1919	859	251	1991	891
HCM 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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	0.0	12.3	15.8	0.0	13.0	19.0	8.1	5.6	17.8	5.6	4.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.3	0.3	1.5	0.1	1.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	1.4	0.0	0.9	0.1	6.3	1.0	0.9	3.4	0.1
LnGrp Delay(d),s/veh	12.5	0.0	12.3	16.2	0.0	13.3	19.4	9.5	5.7	19.4	5.8	4.1
LnGrp LOS	B		B	B		B	B	A	A	B	A	A
Approach Vol, veh/h		40			219			1512			1075	
Approach Delay, s/veh		12.5			14.9			9.2			6.7	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.5	4.4	25.9		12.5	6.4	23.8				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	4.0	21.0		28.0	4.0	21.0				
Max Q Clear Time (g_c+I1), s		4.4	2.2	9.0		8.1	3.8	14.6				
Green Ext Time (p_c), s		1.1	0.0	10.4		1.0	0.0	5.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			8.7									
HCM 2010 LOS			A									

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	468	174	76	521	77	349	1019	145	89	536	205
Future Volume (veh/h)	212	468	174	76	521	77	349	1019	145	89	536	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1788	1863	1863	1788	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	223	493	183	80	548	81	367	1073	153	94	564	216
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1180	507	150	1036	445	449	1739	248	148	1360	507
Arrive On Green	0.13	0.33	0.33	0.08	0.29	0.29	0.10	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	1774	3539	1520	1774	3539	1520	1774	4499	641	1774	3651	1362
Grp Volume(v), veh/h	223	493	183	80	548	81	367	808	418	94	523	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1774	1770	1520	1774	1695	1750	1774	1695	1622
Q Serve(g_s), s	9.0	7.7	6.5	3.1	9.3	2.9	7.0	13.8	13.8	3.7	8.2	8.5
Cycle Q Clear(g_c), s	9.0	7.7	6.5	3.1	9.3	2.9	7.0	13.8	13.8	3.7	8.2	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.84
Lane Grp Cap(c), veh/h	223	1180	507	150	1036	445	449	1311	676	148	1263	605
V/C Ratio(X)	1.00	0.42	0.36	0.53	0.53	0.18	0.82	0.62	0.62	0.63	0.41	0.43
Avail Cap(c_a), veh/h	223	1580	678	198	1530	657	449	1466	756	148	1418	679
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	18.5	18.1	31.5	21.2	18.9	16.8	17.7	17.7	31.8	16.7	16.8
Incr Delay (d2), s/veh	60.7	0.2	0.4	2.9	0.4	0.2	11.3	0.7	1.3	8.5	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	3.8	2.8	1.6	4.6	1.2	5.2	6.5	6.9	2.2	3.9	3.9
LnGrp Delay(d),s/veh	92.0	18.7	18.5	34.4	21.6	19.1	28.0	18.4	19.0	40.2	16.9	17.2
LnGrp LOS	F	B	B	C	C	B	C	B	B	D	B	B
Approach Vol, veh/h		899			709			1593			874	
Approach Delay, s/veh		36.9			22.8			20.8			19.5	
Approach LOS		D			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	25.9	9.0	28.7	11.0	23.0	8.0	29.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	30.0	5.0	28.0	7.0	29.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	5.1	9.7	9.0	10.5	11.0	11.3	5.7	15.8				
Green Ext Time (p_c), s	0.0	8.2	0.0	12.4	0.0	7.7	0.0	9.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			24.4									
HCM 2010 LOS			C									

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 		 			
Traffic Volume (veh/h)	214	970	0	0	1261	493	194	0	744	0	0	0
Future Volume (veh/h)	214	970	0	0	1261	493	194	0	744	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1824	1863	0	1863			
Adj Flow Rate, veh/h	225	1021	0	0	1327	519	204	0	783			
Adj No. of Lanes	2	3	0	0	3	0	2	0	2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	0	2			
Cap, veh/h	373	2754	0	0	1432	555	1330	0	1077			
Arrive On Green	0.11	0.54	0.00	0.00	0.40	0.40	0.39	0.00	0.39			
Sat Flow, veh/h	3442	5253	0	0	3775	1399	3442	0	2787			
Grp Volume(v), veh/h	225	1021	0	0	1246	600	204	0	783			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1695	1616	1721	0	1393			
Q Serve(g_s), s	3.5	6.4	0.0	0.0	19.4	19.7	2.1	0.0	13.3			
Cycle Q Clear(g_c), s	3.5	6.4	0.0	0.0	19.4	19.7	2.1	0.0	13.3			
Prop In Lane	1.00		0.00	0.00		0.87	1.00		1.00			
Lane Grp Cap(c), veh/h	373	2754	0	0	1346	642	1330	0	1077			
V/C Ratio(X)	0.60	0.37	0.00	0.00	0.93	0.93	0.15	0.00	0.73			
Avail Cap(c_a), veh/h	373	2754	0	0	1346	642	2236	0	1811			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.6	7.3	0.0	0.0	15.9	16.0	11.1	0.0	14.5			
Incr Delay (d2), s/veh	2.7	0.1	0.0	0.0	11.1	21.0	0.1	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.8	3.0	0.0	0.0	11.1	12.4	1.0	0.0	5.1			
LnGrp Delay(d),s/veh	26.3	7.4	0.0	0.0	27.0	37.0	11.1	0.0	15.5			
LnGrp LOS	C	A			C	D	B		B			
Approach Vol, veh/h		1246			1846			987				
Approach Delay, s/veh		10.8			30.3			14.6				
Approach LOS		B			C			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.0			8.0	24.0		23.4				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		28.0			4.0	20.0		34.0				
Max Q Clear Time (g_c+I1), s		8.4			5.5	21.7		15.3				
Green Ext Time (p_c), s		17.4			0.0	0.0		4.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				20.5								
HCM 2010 LOS				C								



HCM 2010 Signalized Intersection Summary  
32: Melrose & Orangethorpe

Proposed GP w/ Mitigation - PM Peak Hour

07/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	1082	226	51	836	65	535	446	76	74	240	258
Future Volume (veh/h)	108	1082	226	51	836	65	535	446	76	74	240	258
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1824
Adj Flow Rate, veh/h	114	1139	238	54	880	68	563	469	80	78	253	272
Adj No. of Lanes	2	3	0	2	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1522	318	237	1662	128	511	1096	186	152	521	466
Arrive On Green	0.08	0.36	0.36	0.07	0.35	0.35	0.15	0.36	0.36	0.09	0.29	0.29
Sat Flow, veh/h	3442	4217	881	3442	4816	371	1774	3028	514	1774	1770	1583
Grp Volume(v), veh/h	114	916	461	54	619	329	563	273	276	78	253	272
Grp Sat Flow(s),veh/h/ln	1721	1695	1707	1721	1695	1797	1774	1770	1772	1774	1770	1583
Q Serve(g_s), s	2.0	15.4	15.4	1.0	9.5	9.6	10.0	7.6	7.7	2.7	7.7	9.6
Cycle Q Clear(g_c), s	2.0	15.4	15.4	1.0	9.5	9.6	10.0	7.6	7.7	2.7	7.7	9.6
Prop In Lane	1.00		0.52	1.00		0.21	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	292	1224	616	237	1170	620	511	640	641	152	521	466
V/C Ratio(X)	0.39	0.75	0.75	0.23	0.53	0.53	1.10	0.43	0.43	0.51	0.49	0.58
Avail Cap(c_a), veh/h	316	1247	628	316	1247	661	511	841	842	163	732	655
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	18.3	18.3	28.7	17.1	17.1	17.5	15.7	15.7	28.5	19.0	19.6
Incr Delay (d2), s/veh	0.9	2.5	4.9	0.5	0.4	0.7	70.2	0.5	0.5	2.7	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.5	8.0	0.5	4.5	4.9	15.9	3.8	3.8	1.5	3.8	4.3
LnGrp Delay(d),s/veh	29.1	20.8	23.1	29.2	17.5	17.8	87.6	16.2	16.2	31.2	19.7	20.8
LnGrp LOS	C	C	C	C	B	B	F	B	B	C	B	C
Approach Vol, veh/h		1491			1002			1112			603	
Approach Delay, s/veh		22.1			18.2			52.4			21.7	
Approach LOS		C			B			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	25.6	12.0	21.2	7.5	24.5	7.6	25.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	22.0	8.0	25.0	4.0	22.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	3.0	17.4	12.0	11.6	4.0	11.6	4.7	9.7				
Green Ext Time (p_c), s	0.0	4.1	0.0	5.7	0.0	8.8	0.0	6.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			29.1									
HCM 2010 LOS			C									