Appendix L

Transportation Analysis

Qume & Commerce Development

Transportation Analysis
3rd Submittal

H21-040

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Prepared for

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Prepared by

Kimley»Horn
10 South Almaden Boulevard, Suite 1250
San Jose, CA 95113

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EXECUTIVE SUMMARY

This transportation study evaluates transportation operations and site circulation conditions for the proposed Qume & Commerce project in the City of San José. The project site is in the area located bounded by Qume Drive and Commerce Drive. The Project's site plan proposes to construct up to four (4) warehouses totaling up to 714,491 total square-feet of building area on the 32.80 gross acre site. The project would redevelop the existing site which currently consists of warehouse and industrial facilities. The proposed site would provide up to 413 car parking spaces, 99 trailer parking spaces, and 80 truck loading docks on-site.

The potential adverse effects of the project were evaluated in accordance with the standards and methodologies set forth by the City of San José. Based on the City of San Jose's Transportation Analysis Policy (Policy 5-1) and the 2020 Transportation Analysis Handbook, the transportation analysis report for the project includes a CEQA transportation analysis (TA) and a local transportation analysis (LTA). The CEQA transportation analysis comprises an evaluation of Vehicle Miles Traveled (VMT) which is defined in Chapter 1. The LTA supplements the CEQA transportation analysis by identifying transportation operational issues via an evaluation of weekday AM and PM peak-hour traffic conditions for eleven (11) study intersections near the project site. The LTA also includes an analysis of site access, on-site circulation, parking, vehicle queuing, and effects to transit, bicycle, and pedestrian access.

CEQA Transportation Analysis

Project Vehicle Miles Traveled (VMT) Impacts and Mitigation Measures

The project consists of industrial land use and does not meet the screening criteria for VMT analysis exemption as a small infill project of 30,000 square-feet of total gross floor area or less per City guidelines. The proposed project was evaluated in the VMT tool assuming development of 714,491 square-feet of industrial use.

The City's VMT per employee threshold for industrial land uses is 14.37. For the surrounding land use area, the existing VMT is 14.86. The proposed project is anticipated to generate a VMT per employee of 14.82 (excluding any VMT reduction strategies). The evaluation tool estimates that the project would exceed the City's industrial VMT per employee threshold and would trigger a VMT impact.

Since the project VMT exceeds the industrial thresholds of significance, the project will need to mitigate its CEQA transportation impact by implementing a variety of City approved VMT reduction strategies. Per City direction, the applicant would implement Tier 2 multi-modal infrastructure improvements, and with these measures, the project could achieve a VMT per employee of 13.65 which is below the City threshold. Final implementation of the proposed VMT reduction strategies would need to be coordinated between the project applicant and the City.

The project would exceed the City's industrial VMT per employee threshold and would need to implement the following VMT reduction strategies to mitigate the impact and improve multi-modal access per City request:

- The project would need to construct an internal bicycle / pedestrian pathway connecting the cul-de-sacs at McKay Drive / Automation Parkway and Commerce Drive / Qume Drive.

- The project would need to shift the existing curb lines along the Commerce Drive and Qume Drive frontages 10-feet inwards to achieve a future 40-feet curb-to-curb width along both streets.

Local Transportation Analysis

Project Trip Generation

Trip generation for the proposed project land uses was calculated using average trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* (September 2021).

Per the 2020 *Transportation Analysis Handbook*, trip generation reduction credits were applied to the project including location-based mode-share, potential VMT reduction strategies, and existing land uses. Development of the proposed project with all applicable trip reductions and credits is anticipated to generate a net new total of 0 additional daily trips, 0 AM, and 0 PM peak hour trips to the roadway network. Total gross vehicle trips for the proposed project (excluding existing trip credit adjustments) are 2,035 daily trips, 204 AM peak hour trips, and 204 PM peak hour vehicle trips.

Intersection Traffic Operations

Due to COVID-19 situation, traffic counts for Year 2021 were determined from historic count data. Weekday AM and PM peak hour intersection turning movement volumes for the existing study intersections were obtained from City of San Jose traffic data and augmented with a 1% compound growth rate to Year 2021. These historic counts included vehicles, bicycles, and pedestrians and were collected when local schools were in session and the weather was fair. Traffic volumes at the unsignalized study intersections were supplemented with new turning movement counts on Thursday, September 23, 2021.

The study intersections were assessed under Existing, Background and Project scenarios. City of San José and Valley Transportation Authority Congestion Management Program intersection level of service standards and significance thresholds were used to determine adverse effects caused by the project.

A signal warrant analysis was prepared for the Lundy Avenue and Commerce Drive intersection per the California Manual on Uniform Traffic Control Devices (MUTCD).

Adverse Effects and Improvements

The project is not anticipated to generate an adverse effect to the study intersections during the Project scenario.

Per City request, the project is determining the feasibility of modifying the existing curb line along the Qume Drive and Commerce Drive frontages. Along the project frontages, the curb line would be extended 10-feet inward towards the roadway centerline to achieve a 40-feet curb to curb roadway width along Qume and Commerce Drive. The project applicant is currently evaluating this improvement.

Although the project is not located within the North San Jose Area Development Policy boundary, the project may be required to pay a traffic impact fee based on the distribution of vehicle trips accessing the identified infrastructure improvements within the Policy area. The project is anticipated to add gross PM vehicle trips to the Oakland/Mabury and Lundy/Murphy study intersections; however, accounting

for existing trip credits, the project is anticipated to add 0 total net new PM vehicle trips for traffic impact fees. Therefore, the project is not anticipated to contribute a traffic fee towards the NSJADP.

Vehicle Site Access and Circulation

The site will be accessed from six (6) driveways along Qume Drive, two (2) driveways along Commerce Drive, and three (3) driveways along McKay Drive. Project driveways are designed for truck access along Qume Drive and Commerce Drive and are 32-feet wide. Based on associated turning templates for the given design vehicle, the wider driveway dimensions proposed on the latest site plan are recommended to provide sufficient vehicle access and circulation for entering and exiting vehicles.

The City recommends project driveways which provide passenger vehicle access only to be designed with the City standard width cut of 26-feet.

The proposed driveway locations optimize sight distance and spacing for the proposed site plan. Passenger vehicles, delivery trucks, refuse, and emergency vehicles are able to circulate within the project site without conflict.

Pedestrian, Bicycle, and Transit Site Access

The project will provide on-site pedestrian and bicycle improvements to the existing facilities along the project frontages on Qume Drive, Commerce Drive, and McKay Drive which will enhance bicycle and pedestrian access in the area. These frontage improvements include constructing new 10-feet wide sidewalks by shifting the curb lines and providing a Class I pathway connecting the cul-de-sacs at McKay Drive / Automation Parkway and Commerce Drive / Qume Drive. Due to the function and operational characteristics of the proposed use, the Qume & Commerce project is not anticipated to add substantial project trips to the existing pedestrian, bicycle, or transit facilities in the area. Therefore, the project would not create an adverse effect to the existing pedestrian, bicycle, or transit facility operations.

On-Site Vehicle and Bicycle Parking

Per the City's parking standard, the project site is anticipated to provide sufficient on-site vehicle and bicycle parking to meet the City's minimum parking requirement.

Neighborhood Interface

The project's on-site parking would satisfy the City's vehicle parking standard, and the project is not anticipated to create an adverse effect to the existing parking condition in the surrounding area. The project is not anticipated to create an adverse effect to the existing pedestrian and bicycle facilities in the surrounding area.

1 INTRODUCTION

1.1 Project Description

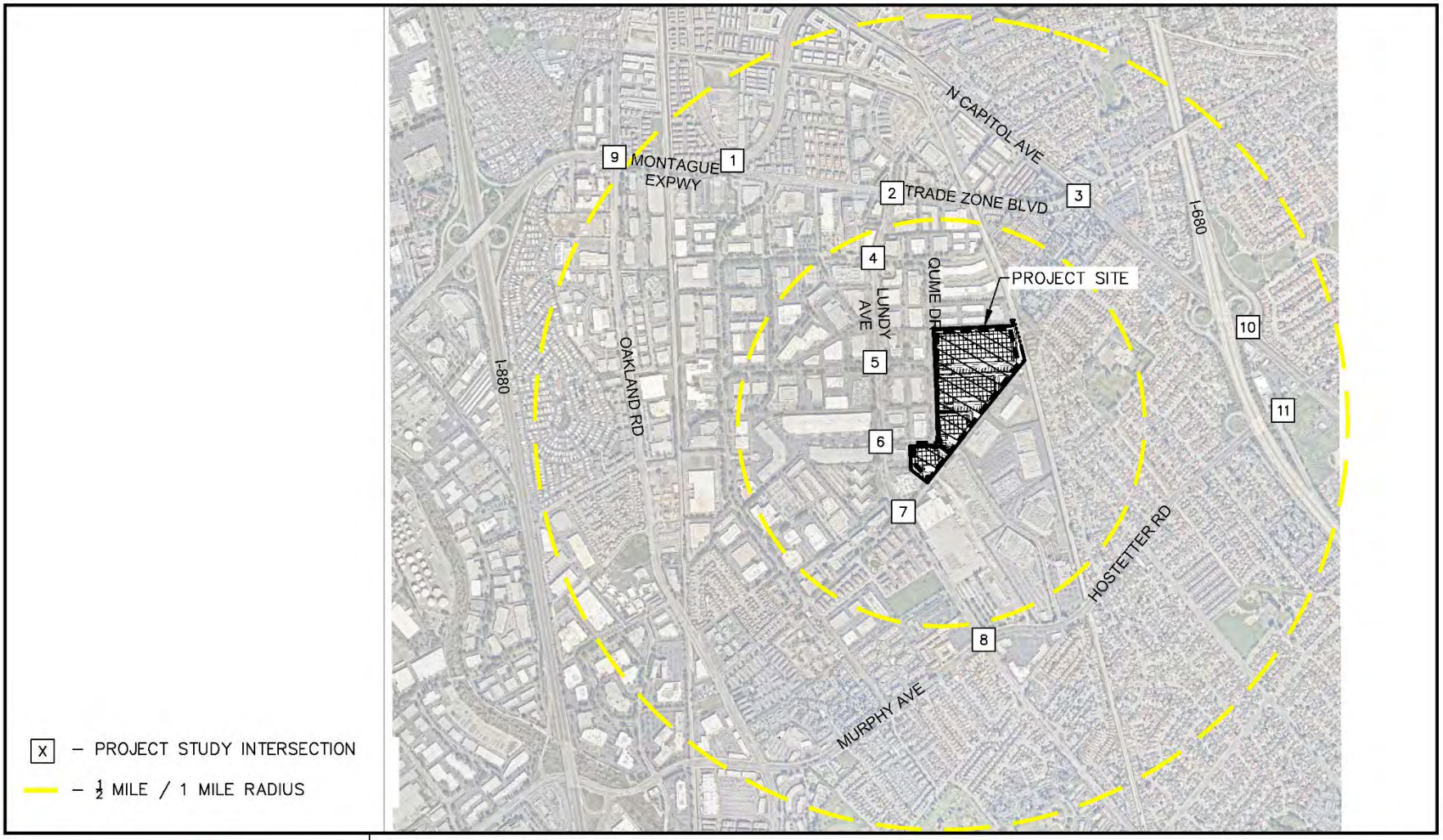
This transportation study evaluates transportation operations and site circulation conditions for the proposed Qume & Commerce project in the City of San José. The project site is in the area located bounded by Qume Drive and Commerce Drive. The Project's site plan proposes to construct up to four (4) warehouses totaling up to 714,491 total square-feet of building area on the 32.80 gross acre site. The project would redevelop the existing site which currently consists of warehouse and industrial facilities.

The proposed site would provide up to 413 car parking spaces, 99 trailer parking spaces, and 80 truck loading docks on-site. The site will be accessed from six (6) driveways along Qume Drive, two (2) driveways along Commerce Drive, and three (3) driveways along McKay Drive.

An overview map showing the project site location is shown in **Figure 1**. Kimley-Horn was retained by the project applicant to provide a traffic operations analysis for the proposed project based on the scope of work approved by the City of San José.

Based on the recently adopted Transportation Analysis Council Policy 5-1, the project will require preparation of a comprehensive Transportation Analysis (TA) per the 2020 San Jose Transportation Analysis Handbook. This TA report evaluates several project and transportation criteria including intersection operations, project trip generation, trip distribution, site access and circulation, sight distance, vehicle queuing, parking, bicycle, pedestrian, and transit facilities, and vehicle miles traveled (VMT).

Figure 1: Project Site Map



1.2 CEQA Transportation Analysis Scope

The California Environmental Quality Act (CEQA) was enacted in 1970 to ensure environmental protection through review of discretionary actions approved by all public agencies. For the City of San Jose, a CEQA transportation analysis requires an evaluation of a project's potential impacts related to VMT and other significance criteria per CEQA and Senate Bill 743.

VMT is defined as the total miles of travel by a personal motorized vehicle a project is expected to generate in a day. VMT is calculated using the Origin-Destination VMT method which measures the full distance of personal motorized vehicle-trips with one end within the project. A project's VMT is compared to the appropriate thresholds of significance based on the project location and type of development. For a residential project, the project's VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita. For an office or industrial project, the project's VMT is divided by the number of employees to determine the VMT per employee. The project's VMT is then compared to the VMT thresholds of significance established based on the average area VMT. A project located in a downtown area with higher density and a diversity of land uses is expected to have a lower project VMT than a project located in a suburban area.

Screening Criteria

The Transportation Analysis Handbook 2020 includes screening criteria for projects that are expected to result in less-than-significant VMT impacts. Projects that meet the screening criteria do not require a CEQA transportation analysis but may be required to provide a Local Transportation Analysis (LTA).

The proposed project, which is a warehouse development, would not meet the industrial screening criteria set forth in the City's Transportation Analysis Handbook. The City of San Jose VMT Evaluation Tool was used to estimate VMT impacts for the project.

VMT Analysis Methodology

The City has developed the San Jose VMT Evaluation Tool to streamline the analysis for residential, office, and industrial projects with local traffic to determine whether a project would result in CEQA transportation impacts related to VMT. The City's Travel Demand Model can also be used to determine project VMT for non-residential or non-office projects, very large projects, or projects that can potentially shift travel patterns.

For this project, the CEQA transportation analysis was assessed using the San Jose VMT Evaluation Tool to determine the potential VMT impact from the project's description, location, land use attributes.

The project's VMT was compared to the City's existing level VMT and VMT thresholds of significance as established in Council Policy 5-1. Project VMT that exceeds the thresholds of significance will need to mitigate its CEQA transportation impact by implementing various VMT reduction strategies described below.

1. Project characteristics (e.g. density, diversity of uses, design, and affordability of housing) that encourage walking, biking and transit uses.
2. Multimodal network improvements that increase accessibility for transit users, bicyclists, and pedestrians,
3. Parking measures that discourage personal motorized vehicle-trips, and

4. Transportation demand management (TDM) measures that provide incentives and services to encourage alternatives to personal motorized vehicle-trips.

Land use characteristics, multimodal network improvements, and parking are physical design strategies that can be incorporated into the project design. TDM includes programmatic measures that aim to reduce VMT by decreasing personal motorized vehicle mode share and by encouraging more walking, biking, and riding transit. TDM measures should be enforced through annual trip monitoring to assess the project's status in meeting the VMT reduction goals.

City of San Jose VMT Threshold

The thresholds of significance for development projects, as established in the Transportation Analysis Policy are based on the existing citywide average VMT level for residential uses and the existing regional average VMT level for employment uses. **Table 1** summarizes the City VMT thresholds of significance for development projects. For residential developments, project generated VMT that exceeds the existing citywide average VMT per capita minus fifteen (15) percent will create a significant adverse impact. For office developments, project generated VMT that exceeds the existing regional average VMT per employee minus fifteen (15) percent will also create a significant adverse impact. This project is an industrial use; therefore, the project VMT per employee exceeds existing regional average VMT per employee will create a significant adverse impact.

Figure 2 and **Figure 3** shows San Jose heat maps identifying existing level VMT per capita for residential uses and VMT per employee for office and industrial uses respectively in the city. Developments in green-colored areas are estimated to have VMT levels below the City's threshold of significance while orange and pink-colored areas are estimated to have VMT levels above the threshold of significance.

Table 1: City of San Jose VMT Thresholds of Significance

Project Type	Significance Criteria	Current VMT Level	VMT Threshold
Residential Uses	Project VMT per capita exceeds existing citywide average VMT per capita minus 15 percent, or existing regional average VMT per capita minus 15 percent, whichever is lower.	11.91 VMT per Capita (Citywide Average)	10.12 VMT per Capita
General Employment Uses	Project VMT per employee exceeds existing regional average VMT per employee minus 15 percent.	14.37 VMT per employee (Regional Average)	12.21 VMT per employee
Industrial Employment Uses	Project VMT per employee exceeds existing regional average VMT per employee.	14.37 VMT per employee (Regional Average)	14.37 VMT per employee
Retail / Hotel / School Uses	Net increase in existing regional total VMT.	Regional Total VMT	Net Increase
Public / Quasi-Public Uses	In accordance with most appropriate type(s) as determined by Public Works Director.	Appropriate levels listed above	Appripriate thresholds listed above
Mixed Uses	Evaluate each land use component of a mixed-use project independently, and apply the threshold of significance for each land use type included.	Appropriate levels listed above	Appripriate thresholds listed above
Change of Use / Additions to Existing Development	Evaluate the full site with the change of use or additions to existing development, and apply the threshold of significance for each project type included.	Appropriate levels listed above	Appripriate thresholds listed above
Area Plans	Evaluate each land use component of the Area Plan independently, and apply the threshold of significance for each land use type included.	Appropriate levels listed above	Appripriate thresholds listed above
Notes:			
VMT thresholds based on City of San Jose, 2018 Transportation Analysis Handbook, Table 2.			

Figure 2: VMT Per Capita Heat Map for Residential Uses

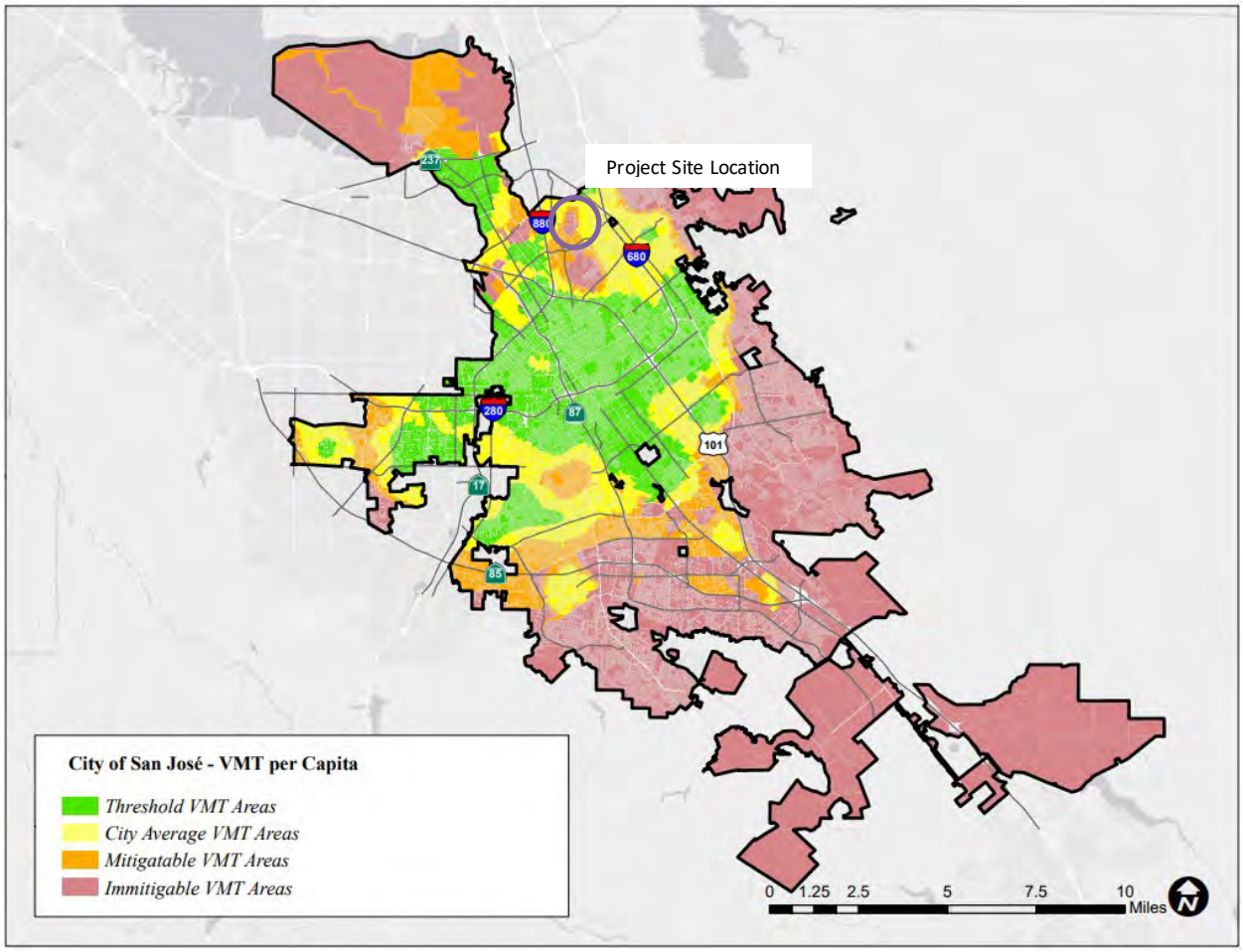
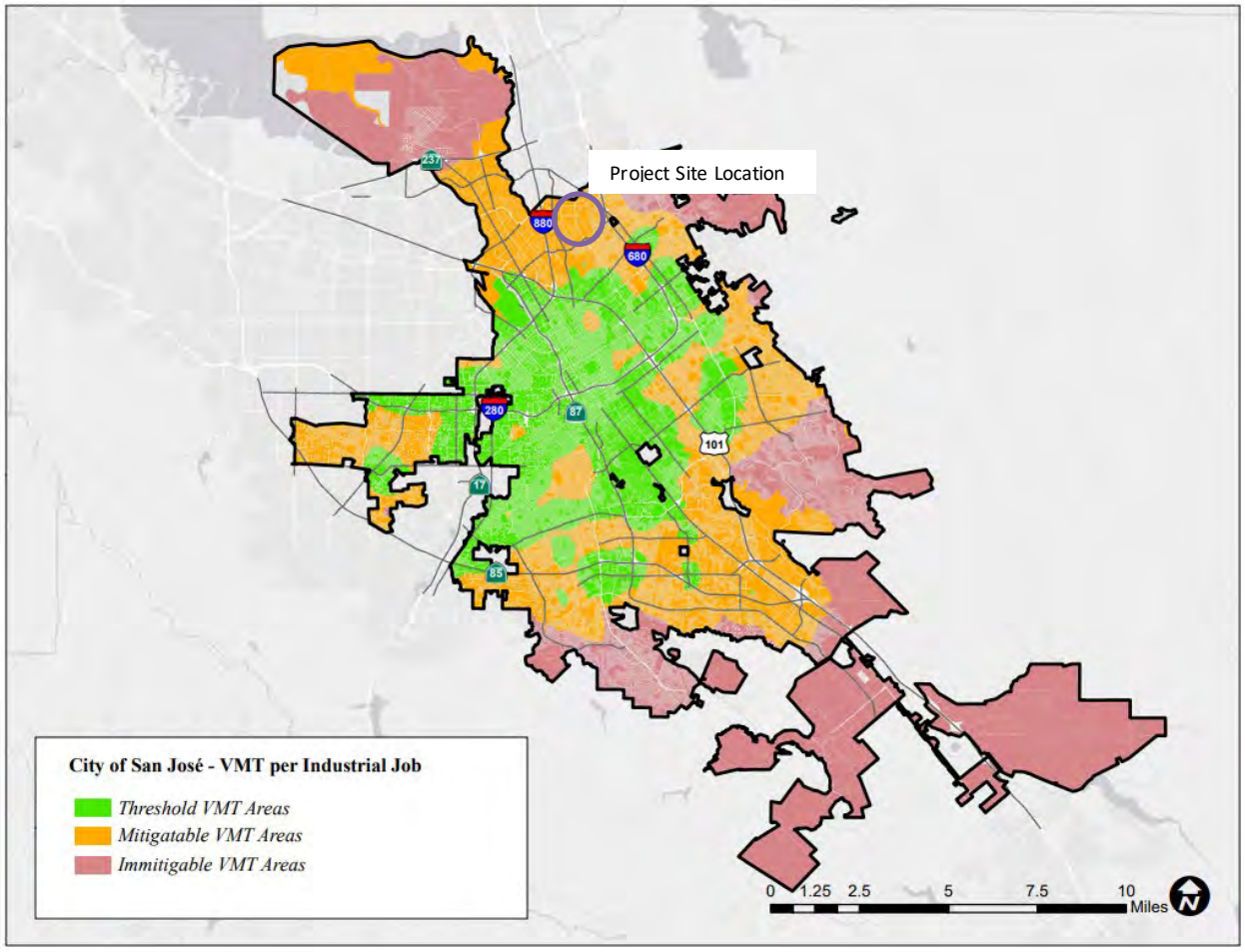


Figure 3: VMT Per Employee Heat Map for Industrial Uses



1.3 Local Transportation Analysis Scope

A Local Transportation Analysis (LTA) evaluates the effects of a development project on transportation, access, circulation, and related safety elements in the proximate area of the project. A LTA also establishes consistency with the General Plan policies and goals through the following three objectives:

1. Ensures that a local transportation system is appropriate for serving the types, characteristics, and intensity of the surrounding land uses;
2. Encourages projects to reduce personal motorized vehicle-trips and increase alternative transportation mode share;
3. Addresses issues related to operation and safety for all transportation modes, with trade-offs guided by the General Plan street typology.

For this project, the LTA was assessed per the guidelines established in the 2020 San Jose Transportation Analysis Handbook and Transportation Analysis work scope for Qume & Commerce dated August 10, 2021.

The LTA study to identify potential traffic adverse effects was evaluated per the standards and guidelines set forth by the City of San Jose and the Santa Clara Valley Transportation Authority (VTA) which administers the County Congestion Management Program (CMP). A project is required to conduct

an intersection operations analysis if the project is expected to add ten (10) or more vehicle trips per peak hour per lane to a signalized intersection that is located within half a mile of the project site. Study intersections for the project were selected in consultation with City staff and in accordance with the VTA's TIA Guidelines. The following eleven (11) intersections studied in this TA are listed below.

1. Trade Zone Boulevard / Montague Expressway (CMP)
2. Trade Zone Boulevard / Lundy Avenue
3. Trade Zone Boulevard / N Capitol Avenue
4. Lundy Avenue / Fortune Drive
5. Lundy Avenue / Concourse Drive
6. Lundy Avenue / Commerce Drive (unsignalized)
7. Lundy Avenue / McKay Drive
8. Lundy Avenue / Murphy Avenue / Hostetter Road (CMP)
9. Oakland Road / Montague Expressway (CMP)
10. I-680 NB Ramps / N Capitol Avenue
11. I-680 NB Ramps / Hostetter Road

Study Scenarios

Traffic conditions for each study intersection were analyzed during the 7:00 – 9:00 AM and 4:00 – 6:00 PM peak hours of traffic which represent the most heavily congested traffic on a typical weekday. The study intersections were assessed under the following study scenarios.

- **Existing Conditions**: Existing AM and PM peak-hour traffic volumes, intersection geometry, and traffic control based on City of San Jose traffic data with a 1% compound growth rate applied at the study intersections to Year 2021 forecasts.

- **Background Conditions**: Peak-hour traffic volumes based on Existing conditions and adding City Approved Trip Inventory (ATI) traffic volumes from City of San Jose database to the Existing roadway geometry and traffic control. The ATI volumes represent approved but not yet constructed developments in the vicinity of the project study area.

- **Background Plus Project Conditions**: Peak-hour traffic volumes based on Background conditions and adding the net vehicle trips from the proposed Qume & Commerce project to the Background roadway geometry and traffic control. The Project scenario is compared to the Background conditions for determining project traffic adverse effects.

Intersection Level-of-Service Criteria and Thresholds

Analysis of potential adverse effects at roadway intersections is based on the concept of level-of-service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS A (best) represents minimal delay, while LOS F (worst) represents heavy delay and a facility that is operating at or near its functional capacity. LOS for this study was based on the Highway Capacity Manual (HCM) 2000 methodology with TRAFFIX software. This methodology is used by the City of San Jose for CMP-designated intersections and determining average intersection vehicle delay measured in seconds. The City of San Jose does not have any formally adopted LOS standard for unsignalized intersections; LOS would generally only be used to determine the need for modification in the type of intersection control. The standards used by the City of San Jose to measure signalized intersection operations are summarized below in **Table 2**.

Table 2: Intersection Operation Standards at Signalized Intersections

Operations Standard	Descriptions	Average Control Delay (seconds/vehicle)
A	Operations with very low delay occurring with favorable progress and/or short cycle lengths.	10.0 or less
B	Operations with low delay occurring with good progression and/or short cycle lengths.	Between 10.1 and 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	Between 20.1 and 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	Between 35.1 and 55.0
E	Operations with high delays indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	Between 55.1 and 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	Higher than 80.0

Project adverse effects are determined by comparing baseline conditions to those scenarios with the proposed Project. Adverse effects for intersections are created when traffic from the proposed Project causes the LOS to fall below the maintaining agency's LOS threshold or causes deficient intersections to deteriorate further, per the criteria indicated below.

City of San Jose LOS Threshold

The City's acceptable intersection operations standard is LOS "D" unless superseded by an Area Development Policy. An adverse effect on intersection operations occurs when the analysis demonstrates that a project would cause the operations standard at a study intersection to fall below LOS "D" with the addition of project vehicle-trips to baseline conditions.

For intersections already operating at LOS "E" or LOS "F" under the baseline conditions, an adverse effect is defined as:

- An increase in average critical delay by 4.0 seconds or more AND an increase in the critical volume-to-capacity (V/C) ratio of 0.010 or more; OR
- A decrease in average critical delay AND an increase in the critical V/C ratio of 0.010 or more.

CMP Intersection LOS Threshold

The County's operations standard for a CMP identified intersection is LOS "E". A project is anticipated to create a significant adverse effect on traffic conditions at a CMP signal if:

- LOS at the intersection degrades from and acceptable LOS "E" or better under baseline conditions to an unacceptable LOS F under baseline plus project conditions; OR
- LOS at the intersection is an unacceptable LOS "F" under baseline conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four (4) or more seconds AND the volume-to-capacity ratio (V/C) to increase by one percent (0.01) or more.

1.4 Report Organization

This report includes a total of six (6) chapters as follows:

- **Chapter 2** describes existing transportation conditions including VMT of the existing land uses in the proximity of the project, the existing roadway network, transit service, bicycle, and pedestrian facilities.
- **Chapter 3** describes the CEQA transportation analysis, including the project VMT impact analysis.
- **Chapters 4, 5, and 6** describe the local transportation analysis including operations of study intersections, the methods used to estimate project-generated traffic, the project's effects on the transportation system, and an analysis of other transportation issues including site access and circulation, parking, transit services, bicycle and pedestrian facilities, and neighborhood intrusion.
- **Chapter 7** provides a summary of the findings provided in the report.

2 EXISTING TRANSPORTATION CONDITIONS

This chapter describes the existing conditions of the transportation system within the study area. It presents the existing land use's vehicle miles traveled (VMT) near the project and describes transportation facilities near the project site, including the roadway network, transit service, and pedestrian and bicycle facilities. The analysis of existing intersection operations is included as part of the Local Transportation Analysis (Chapters 4, 5, and 6).

2.1 Vehicle Miles Traveled

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool to streamline the analysis for residential, office, and industrial projects. Based on the VMT Evaluation Tool and the project's APN, the existing VMT for industrial employment uses in the project vicinity is 14.86 per employee. The current regional average VMT for industrial employment uses is 14.37 per employee (see **Table 1**). Thus, the VMT levels of existing employment uses in the project vicinity are above the average VMT levels. Chapter 3 presents additional information on the project's VMT.

2.2 Existing Roadway Network

The following local and regional roadways provide access to the project site:

Qume Drive is a local connector street in the north-south direction between Commerce Drive and Fortune Drive. Near the project site, Qume Drive is a two-lane road with a two-way left-turn lane that provides direct access to commercial and industrial businesses. On-street parking is prohibited along Qume Drive and the road does not have sidewalk access for pedestrians. The proposed Qume & Commerce project is located in between Concourse Drive and Commerce Drive

Commerce Drive is a local connector street in the east-west direction and provides direct access to the proposed project site. Near the project site, Commerece Drive is a two-lane road with a two-way left-turn lane. On-street parking is prohibited along Commerce Drive and there are no existing continuous sidewalk facilities for pedestrians.

Lundy Avenue is a four-lane divided arterial in the north-south direction that provides access to various residential, commercial, and industrial businesses between Trade Zone Boulevard and Commodore Drive. Lundy Avenue is designated as a City Connector Street. The roadway has a posted speed limit of 40 mph and has sidewalks and Class II bike lanes on both sides of the street.

Trade Zone Boulevard is a four-lane arterial that provides east-west access to various commercial and industrial businesses between Montague Expressway and Capitol Avenue. The roadway is designated as a City Connector Street. Near the project site, the roadway has a posted speed limit of 40 mph, has sidewalks, and provides Class II bike lanes on both sides of the street.

Brokaw / Murphy Road is a six-lane, east-west city connector street that provides access to the San Jose airport as well as various commercial and industrial businesses between US 101 and Oakland Road. The roadway is divided by a raised median and provides Class II bike lanes and sidewalk facilities in both directions. Brokaw Road/Murphy Road is designated as a city connector street in the project vicinity and turns into Hostetter Road east of Lundy Road.

Montague Expressway is county route G4 that operates in the east-west direction, extending from Interstate 680 in Milpitas to Highway 101 in Santa Clara. East of Capitol Avenue, Montague Expressway is an eight-lane divided road that provides direct access to major regional facilities including I-880 and I-680 as well as regional destinations such as the Milpitas Great Mall. West of Capitol Avenue, Montague Expressway is a six-lane divided road that serves as an access corridor for commercial and industrial developments. The road does not provide on-street parking but provides a Class II bike lane and some sidewalk facilities.

Interstate 680 (I-680) is primarily a six-lane freeway that is aligned in a north-south orientation between Interstate 80 in Oakland and Highway 101 in San Jose at which it transitions into Interstate 280 to San Francisco. Access to the project site to and from I-680 is provided by nearby ramps at Capitol Avenue and Hostetter Road.

Interstate 880 (I-880) is primarily a six-lane freeway that is aligned in a north-south orientation between Interstate 80 in Oakland and Interstate 280 in San Jose at which it transitions into Highway 17 to Santa Cruz. Access to the project site to and from I-880 is provided by nearby ramps at Montague Expressway and Brokaw Road.

2.3 Existing Pedestrian and Bicycle Facilities

Pedestrian activity within the project study area is sparse. Connected sidewalks at least six feet wide are available along all major roadways in the study area with adequate lighting and signing. At signalized intersections, marked crosswalks, Americans with Disabilities Act (ADA) standard curb ramps, and count down pedestrian signals provide improved pedestrian visibility and safety.

Bicycle facilities in the area include Montague Expressway, Trade Zone Boulevard, Capitol Avenue, Oakland Road, Lundy Avenue, Murphy Road, and Hostetter Road which provide Class II bike lanes with buffered striping to separate the vehicle and bike travel way. Some of these corridors feature green paint markings in potential conflict areas and at signalized intersections. Bicycle parking in the project study area is limited to private commercial and industrial lots.

Near the project site, Qume Drive and Commerce Drive does not provide sidewalk or bicycle facilities for pedestrians and cyclists. Overall, the existing pedestrian and bicycle facilities near the project have inadequate connectivity to provide pedestrians and bicyclists with designated routes to the surrounding land uses.

The San Jose Better Bike Plan 2025 indicates that a variety of bicycle facilities are planned in the project study area and the following facility improvements would benefit the project.

- Class II Bike Lanes
  - McKay Drive/Automation Parkway from Lundy Avenue to Hostetter Road
- Class III Bike Boulevard
  - Lundy Place/ Trimble Road from Trade Zone Boulevard to Piedmont Road
- Class IV Protected Bike Lanes
  - Montague Expressway from E Trimble Road to Trade Zone Boulevard
  - Trade Zone Boulevard from Montague Expressway to Piedmont Road
  - Lundy Avenue from Trade Zone Boulevard to Mabury Road
  - Murphy / Hostetter Road from I-880 to Capitol Avenue

2.4 Existing Transit Facilities

Transit services in the study area include light rail, shuttles, and buses provided by the Santa Clara Valley Transportation Authority (VTA). Per the updated October 1, 2021* service schedule, the project study area is served by the following major transit routes.

- Local Bus Route 20
  - Milpitas BART – Sunnyvale Transit Center
  - Local service every 30-60 minutes on weekdays and weekends
  - Nearest transit stop to project – Montague Expwy / Trade Zone Blvd intersection
- Local Bus Route 44
  - Milpitas BART – McCarthy Ranch via Tasman & Alder
  - Local service every 30-60 minutes on weekdays and weekends
  - Nearest transit stop to project – Montague Expwy / Trade Zone Blvd intersection
- Frequent Bus Route 60
  - Milpitas BART – Winchester Station via SJC Airport
  - Local service every 12-15 minutes on weekdays and every 15-30 minutes on weekends
  - Nearest transit stop to project – Lundy Ave / Concourse Dr
- Frequent Bus Route 77
  - Milpitas BART – Eastridge via King
  - Local service every 12-15 minutes on weekdays and every 15-30 minutes on weekends
  - Nearest transit stop to project – Lundy Ave / Concourse Dr
- Light Rail Orange Line
  - Mountain View – Alum Rock
  - Nearest transit stop to project – Milpitas Transit Center and Cropley Station

**Note that the routes and service schedules described above are based on October 1, 2021 schedules. At the time that this report was prepared, COVID 19 had affected routes and service schedules and is not reflective of typical operations.*

Most regular bus routes operate on weekdays from early in the morning (5:00 AM to 6:00 AM) until late in the evening (10:00 PM to midnight) and on weekends from early morning (5:00 AM to 6:00 AM) until mid-evening (8:00 PM to 10:00 PM). Bus headways during peak commute periods vary between 12 to 30 minutes. The study area is served by bus routes 20, 44, 60, and 77 in the VTA system which provide local and regional bus service for commuters between San José downtown and major transit destinations in Santa Clara County. These bus routes also provide transit connections to the Valley Fair Transit Center, San Jose Diridon Station (Caltrain, ACE, Amtrak), Santa Clara Transit Center, VTA Light Rail stations, and Berryessa Transit Center (BART).

Bus stops with benches, shelters, and bus pullout amenities are not provided within ½ mile walking distance from the project site. The closest transit stops by the project are located at the Lundy Ave / Concourse Dr and Lundy Ave / Commerce Dr intersections.

2.5 Existing Intersections

The traffic study to identify potential traffic adverse effects was evaluated per the standards and guidelines set forth by the City of San Jose and the Santa Clara Valley Transportation Authority (VTA) which administers the County Congestion Management Program (CMP). Study intersections for the project were selected in consultation with City staff and in accordance with the VTA's TIA Guidelines. The eleven (11) intersections studied in this TA are listed below.

1. Trade Zone Boulevard / Montague Expressway (CMP)
2. Trade Zone Boulevard / Lundy Avenue
3. Trade Zone Boulevard / N Capitol Avenue
4. Lundy Avenue / Fortune Drive
5. Lundy Avenue / Concourse Drive
6. Lundy Avenue / Commerce Drive (unsignalized)
7. Lundy Avenue / McKay Drive
8. Lundy Avenue / Murphy Avenue / Hostetter Road (CMP)
9. Oakland Road / Montague Expressway (CMP)
10. I-680 NB Ramps / N Capitol Avenue
11. I-680 NB Ramps / Hostetter Road

2.6 Existing Field Observations

Field observations did not reveal any significant traffic related congestion within the project study area. During the AM and PM peak hours, some traffic queueing was observed due to the freeway ramp meters in operation at the I-680 and I-880 on-ramp intersections; however, traffic on the freeway ramps did not impact operations at the signalized intersections along Montague Expressway and Capitol Avenue.

2.7 North San Jose Area Development Policy

The project not located within a City identified development policy; however, the project is located adjacent to the North San Jose Area Development Policy (NSJADP) boundary. The NSJADP establishes a policy framework to guide the ongoing development of the Rincon de los Esteros Redevelopment area and accomplish the following goals:

1. Promote Economic Activity – Provide additional long-term development capacity to support the creation of up to 80,000 new jobs along the North San Jose First Street Corridor
2. Promote Livability – Add new housing and retail development in close proximity to new jobs, amenities, and transit infrastructure
3. Promote Long-Term Vitality – Establish fair-share funding mechanisms for infrastructure improvements necessary to support new development.

The NSJADP was initially adopted in 2005 to facilitate commercial, industrial, and residential development in the Rincon de los Esteros Redevelopment area. Subsequent to its adoption, the Policy has been updated to accommodate intensified land use changes such as establishment of an industrial core area designation to support development of a driving industry corporate center and establishment of a transit/employment residential overlay (TERO) to promote livability. The policy allows for a net total of up to 26.7 million square feet of new industrial development, up to 32,000 new residential dwelling units, and up to 1.7 million square feet of new local servicing commercial uses.

North San José is an established urban area that has long been planned for industrial park uses. The new development provided for through this Policy will more fully utilize new and existing infrastructure systems, resulting in a lesser need for new infrastructure in the near and long term than would result from a more sprawling form of growth. The proposed changes in land use and land use intensity will, however, also require some modifications in the planned and built infrastructure, especially in the transportation system. Additional infrastructure that will be provided specifically through the implementation of this Policy will include the intersection and roadway improvements and other utility improvements. The City will collect a Traffic Impact Fee to be used to fund the mitigation measures needed to meet future traffic conditions resulting from implementation of this Policy as described in the traffic analysis and Environmental Impact Report (EIR).

Traffic Impact Fees

The NSJADP identifies infrastructure improvements for buildout in the North San Jose Traffic Impact Fee Plan (2005). The following improvements within one (1) mile from the project site include:

Roadway Improvements:

- Montague Expressway Widening – As part of the Tier 1-A improvements to Montague Expressway identified by the County, Montague Expressway will be widened within North San Jose from six to eight lanes between North First Street and I-880. The project will also include the improvement of the I-880 interchange to a partial cloverleaf interchange and intersection improvement at River Oaks/Plumeria and McCandless/Trade Zone. Tier 1-B improvements to Montague Expressway include the construction of a flyover from westbound Montague Expressway to southbound Trimble Road.

Intersection Improvements:

- (10) Old Oakland Road and Montague Expressway - Needed improvements consist of the addition of a second southbound left-turn lane on Old Oakland Road.
- (22) Lundy Avenue and Murphy Avenue – Impacted intersection but no identified feasible improvements possible

The cost of roadway and intersection improvements in North San Jose as well as other parts of the city where it is expected that traffic associated with North San Jose development would have adverse effects totals approximately $519 million. A portion of these costs are planned to be funded by the City of San Jose and other funding sources totaling approximately $59 million. A portion of the funding for the needed improvements will be contributed by the City of San Jose and other regional programs, but the majority of funding will be collected via a traffic impact fee (TIF) for all new development within North San Jose. The North San Jose traffic impact fee is based on PM peak-hour trip-making characteristics of the particular land use proposed for development in North San Jose. The PM peak hour is used because it is the PM peak hour during which traffic conditions are the worst.

Although the project is not located within the NSJADP boundary, the project may be required to pay a NSJADP TIF based on the distribution of vehicle trips accessing the identified infrastructure improvements within the Policy area. The TIF the project may be required to pay will be based on the current July 21, 2021 fee of $18,725 per PM peak hour trip.

3 CEQA TRANSPORTATION ANALYSIS

This chapter describes the CEQA transportation analysis, including the VMT threshold of significance, the project-level VMT impact analysis results, and the mitigation measures that are necessary to reduce a VMT impact.

3.1 Project VMT Analysis

A VMT analysis was used to evaluate the Qume & Commerce project VMT levels against the appropriate thresholds of significance established in Council Policy 5-1. Section 3.4 and Table 1 of the *Transportation Analysis Handbook* identifies screening criteria to exempt certain components of a project that are expected to result in a less-than significant VMT impact from the project description, characteristics, and/or location; However, the project does not satisfy the small infill screening criteria of 30,000 industrial s.f. of gross floor area or less for VMT analysis exemption.

The City of San Jose VMT Evaluation Tool was used to estimate VMT impacts for the project. The VMT Evaluation Tool calculates the per-capita and per-employee VMT for the half-mile radius surrounding the project site, as calculated using the City's travel demand model and adjusted to the parcel level. For projects that would trigger a VMT impact, VMT reduction strategies such as introducing TDM or additional multimodal infrastructure can be used to mitigate the VMT impact which is estimated from research literature and case studies.

The proposed project was evaluated in the VMT tool assuming development of 714,491 square-feet of industrial use. This land use total includes a portion of the site dedicated to office square-foot space which is typical of a warehouse land use. The proposed project designates approximately 20,000 square-feet or 2.8% of the total square footage as office land use, and this office allocation is consistent with other recent warehouse developments in the City of San Jose. An office-to-office warehouse square footage comparison summary of recent developments is presented in Section H of the **Appendices**.

Therefore, although 20,000 square feet of the total development is office use, the whole project is analyzed as an industrial land use for VMT impact. **Table 3** summarizes the VMT analysis.

Table 3: Project VMT Analysis

Scenario	Industrial VMT per Employee	Exceeds City Threshold and VMT Impact?
City VMT Threshold	14.37	N/A
Existing Conditions	14.86	Yes
Project Conditions	14.82	Yes
Project with VMT Reduction Strategies	13.65	No

The City's VMT per employee threshold for industrial land uses is 14.37. For the surrounding land use area, the existing VMT is 14.86. The proposed project (APN 244-15-026) is anticipated to generate a VMT per employee of 14.82 (excluding any VMT reduction strategies). The evaluation tool estimates that the project would exceed the City's industrial VMT per employee threshold and would trigger a VMT impact. The project will need to implement VMT reduction strategies to mitigate the VMT impact.

A summary of the project VMT outputs/results using the City's Evaluation Tool is presented in **Figure 4** and the **Appendices**.

3.2 VMT Reduction and Mitigation Measures

Projects must propose measures to reduce project VMT or mitigate a CEQA transportation impact if identified. Projects may select a combination of measures from the four VMT reduction strategies described in Section 3.6 of the Transportation Analysis Handbook which include project characteristics, multimodal improvements, parking, and transportation demand management (TDM) programs.

Since the project VMT exceeds the industrial thresholds of significance, the project will need to mitigate its CEQA transportation impact by implementing a variety of VMT reduction strategies. As addressed in the Transportation Analysis Handbook, the project should consider the following site design measures to mitigate its VMT impact:

- Incorporate physical improvements, such as sidewalk improvements, landscaping and bicycle parking that act as incentives for pedestrian and bicycle modes of travel.
- Provide secure and conveniently located bicycle parking and storage for employees and visitors;
- Provide bicycle and pedestrian connections from the site to the regional bikeway/pedestrian trail system.
- Place assigned carpool and van pool parking spaces at the most desirable on-site locations;
- Provide showers and lockers for employees walking or bicycling to work.
- Incorporate commercial services onsite or in close proximity
- Provide an on-site TDM coordinator;
- Provide transit information kiosks;
- Make transportation available during the day and guaranteed ride home programs for emergency use by employees who commute on alternate transportation. (This service may be provided by access to company vehicles for private errands during the workday and/or combined with contractual or pre-paid use of taxicabs, shuttles, or other privately provided transportation.);
- Provide vans for van pools;
- Implementation of a carpool/vanpool program (e.g., carpool ride matching for employees, assistance with vanpool formation, provision of vanpool vehicles, and car sharing);
- Provide shuttle access to regional rail stations (e.g. Caltrain, ACE, BART);
- Provide or contract for on-site or nearby child care services;
- Offer transit use incentive programs to employees, such as on site distribution of passes and/or subsidized transit passes for a local transit system (e.g. providing VTA Eco Pass system or equivalent broad spectrum transit passes to all on-site employees);
- Implementation of parking cash out program for employees (non-driving employees receive transportation allowance equivalent to the value of subsidized parking);
- Encourage use of telecommuting and flexible work schedules;
- Require that deliveries on-site take place during non-peak travel periods.

The project applicant would be responsible for ensuring that the VMT reduction strategies are implemented. After the development is constructed and the site is occupied, the property manager for the project would assume responsibility for implementing any ongoing VMT reduction strategies.

Based on direction from the City, implementation of several Tier 2 multi-modal infrastructure improvements can reduce the project per employee industrial VMT to 13.65 which is below the 14.37 industrial VMT threshold. Although implementation of every available City VMT reduction strategy may

not be feasible, it should be noted that a combination of identified subset VMT reduction strategies can help the project meet the City VMT threshold.

The following describes the applicable VMT reduction strategies that the project applicant will incorporate to reduce the project's VMT and satisfy the City's VMT per employee threshold. The proposed VMT measures and results are based on inputs from the City of San Jose VMT Evaluation Tool. Final implementation of the listed VMT reduction strategies would need to be coordinated between the project applicant and the City.

3.3 Tier 2 Multi-Modal Infrastructure

Per City request to improve multi-modal access, the project would need to coordinate with the City and implement the following improvements for VMT mitigation:

Construct an internal bicycle / pedestrian pathway connecting the cul-de-sacs at McKay Drive / Automation Parkway and Commerce Drive / Qume Drive.

This multimodal improvement would satisfy the following VMT reduction strategies:

1. Network Connectivity / Design Improvements – This improvement would increase multimodal density from 2 intersections per square mile to 3 intersections per square mile

Shift existing curblines along the Commerce Drive and Qume Drive frontages 10-feet inwards to achieve a future 40-feet curb-to-curb width along both streets.

This multimodal improvement would satisfy the following VMT reduction strategies:

1. Traffic Calming Measures – This improvement would provide traffic calming measures along the project frontage on Qume Drive and Commerce Drive. Theis would effectively improve pedestrian access with additional space for a wide sidewalk and landscaping features while the narrower street width would help control vehicle speeds.

A summary of the project VMT outputs with the identified VMT reduction strategies from the City's Evaluation Tool is presented in **Figure 5** and the **Appendices**. These multimodal improvements would need to be coordinated between the project applicant and the City for approval and are discussed in Section 5.5.

3.4 Cumulative Impact Analysis

Projects must also demonstrate consistency with the Envision San Jose 2040 General Plan to address cumulative impacts. If a project is determined to be consistent with the General Plan, the project will be considered part of the cumulative solution to meet the General Plan's long-range goals and it will result in a less-than-significant cumulative impact. Factors that contribute to a determination of consistency with the General Plan include a project's density, design, and conformance to the goals and policies set forth in the General Plan.

Based on the project description and intended use, the proposed Qume & Commerce development is consistent with the goals of the General Plan and is anticipated to result in a less-than-significant cumulative impact.

Figure 4: San Jose VMT Evaluation Tool Report (Project Conditions)

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

PROJECT:

Name: Qume And Commerce Drive
Location: Qume Drive & Commerce Drive
Parcel: 24415026 Parcel Type: Suburb with Multifamily Housing
Tool Version: 2/29/2019
Date: 12/9/2021
Proposed Parking Spaces Vehicles: 413 Bicycles: 22

LAND USE:

Residential:		Percent of All Residential Units	
Single Family	0 DU	Extremely Low Income (≤ 30% MFI)	0 % Affordable
Multi Family	0 DU	Very Low Income (> 30% MFI, ≤ 50% MFI)	0 % Affordable
Subtotal	0 DU	Low Income (> 50% MFI, ≤ 80% MFI)	0 % Affordable
Office:	0 KSF		
Retail:	0 KSF		
Industrial:	714.5 KSF		

VMT REDUCTION STRATEGIES

Tier 1 - Project Characteristics

Increase Residential Density
- Existing Density (DU/Residential Acres in half-mile buffer) 9
- With Project Density (DU/Residential Acres in half-mile buffer) 9

Increase Development Diversity
- Existing Activity Mix Index 0.84
- With Project Activity Mix Index 0.82

Integrate Affordable and Below Market Rate
- Extremely Low Income BMR units ..... 0 %
- Very Low Income BMR units ..... 0 %
- Low Income BMR units ..... 0 %

Increase Employment Density
- Existing Density (Jobs/Commercial Acres in half-mile buffer) 38
- With Project Density (Jobs/Commercial Acres in half-mile buffer) 42

Tier 2 - Multimodal Infrastructure

Tier 3 - Parking

Tier 4 - TDM Programs

EMPLOYMENT ONLY

The tool estimates that the project would generate per non-industrial worker VMT and per industrial worker VMT above the City's threshold.

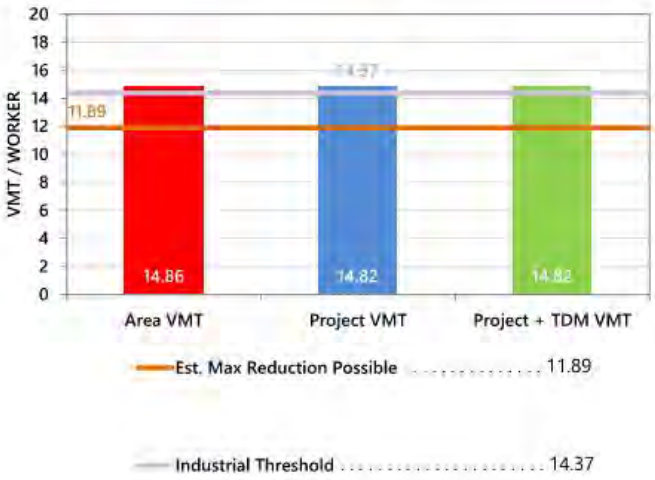


Figure 5: San Jose VMT Evaluation Tool Report (Project with VMT Reduction Strategies)

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

PROJECT:

Name: Qume And Commerce Drive — Tool Version: 2/29/2019
Location: Qume Drive & Commerce Drive — Date: 12/13/2021
Parcel: 24415026 Parcel Type: Suburb with Multifamily Housing
Proposed Parking Spaces Vehicles: 413 Bicycles: 22

LAND USE:

Residential:		Percent of All Residential Units	
Single Family	0 DU	Extremely Low Income (≤ 30% MFI)	0 % Affordable
Multi Family	0 DU	Very Low Income (> 30% MFI, ≤ 50% MFI)	0 % Affordable
Subtotal	0 DU	Low Income (> 50% MFI, ≤ 80% MFI)	0 % Affordable
Office:	0 KSF		
Retail:	0 KSF		
Industrial:	714.5 KSF		

VMT REDUCTION STRATEGIES

Tier 1 - Project Characteristics

Increase Residential Density
- Existing Density (DU/Residential Acres in half-mile buffer) 9
- With Project Density (DU/Residential Acres in half-mile buffer) 9

Increase Development Diversity
- Existing Activity Mix Index 0.84
- With Project Activity Mix Index 0.82

Integrate Affordable and Below Market Rate
- Extremely Low Income BMR units ..... 0 %
- Very Low Income BMR units ..... 0 %
- Low Income BMR units ..... 0 %

Increase Employment Density
- Existing Density (Jobs/Commercial Acres in half-mile buffer) 38
- With Project Density (Jobs/Commercial Acres in half-mile buffer) 42

Tier 2 - Multimodal Infrastructure

Increase Network Connectivity *(In Coordination with SJ)*
- Intersection Density ..... 2 int/sqmi
- Intersection Density with Project ..... 3 int/sqmi

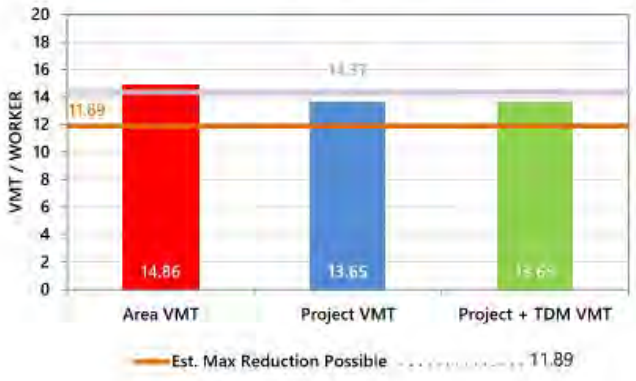
Traffic Calming Measures *(In Coordination with SJ)*
- Are improvements provided beyond the development frontage? ..... Yes

Tier 3 - Parking

Tier 4 - TDM Programs

EMPLOYMENT ONLY

The tool estimates that the project would generate per non-industrial worker VMT below the City's threshold. There are selected strategies that require coordination with the City of San Jose to implement.



4 LTA PROJECT DESCRIPTION

This chapter describes the local transportation analysis including the method by which project traffic is estimated through trip generation, trip distribution, and volume assignment.

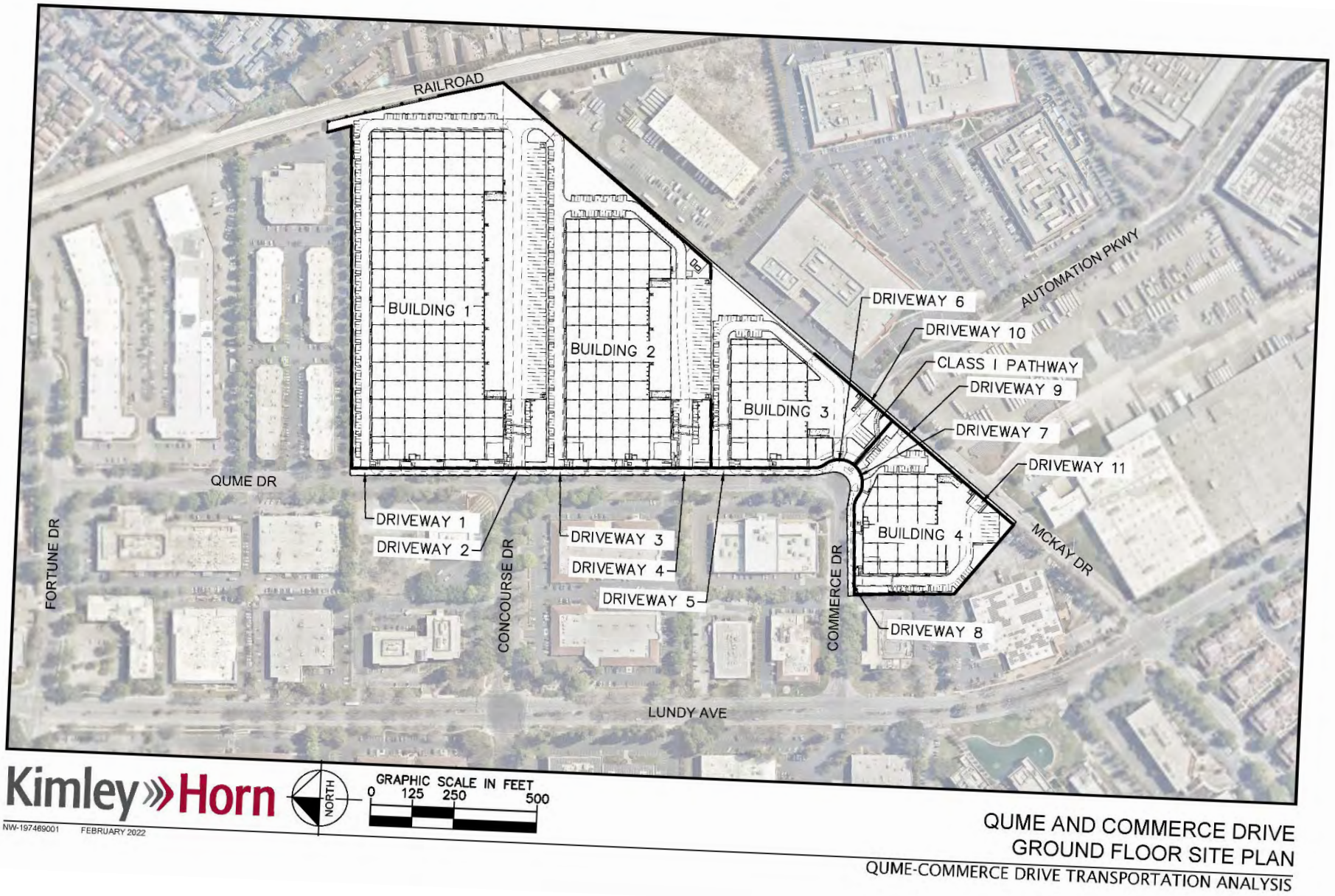
4.1 Project Site Plan

Based on the most recent site plan provided by the project applicant, the project site is in the area located bounded by Qume Drive and Commerce Drive. The Project's site plan proposes to construct up to four (4) warehouses totaling up to 714,491 total square-feet of building area on the 32.80 gross acre site. The project would redevelop the existing site which currently consists of warehouse and industrial facilities.

The proposed site would provide up to 413 car parking spaces, 99 trailer parking spaces, and 80 truck loading docks on-site. The site will be accessed from six (6) driveways along Qume Drive, two (2) driveways along Commerce Drive, and three (3) driveways along McKay Drive.

The project site plan is presented in **Figure 6** and the **Appendices**.

Figure 6: Project Site Plan



4.2 Project Trip Generation

Project Site Vehicle Operations

Trip generation for the proposed project land uses was calculated using average trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* (September 2021).

A trip is defined as a single or one-directional vehicle movement in either the origin or destination at the project site. In other words, a trip can be either "to" or "from" the site. In addition, a single customer visit to a site is counted as two trips (i.e. one to and one from the site). Daily, AM, and PM peak hour trips for the project were calculated with average trip rates.

The project description and future tenant for the four industrial use buildings is under negotiation at this time; however, the speculative project building could be a warehouse for distribution. Due to the project description and the unknown future tenants for the industrial uses, the following ITE land uses were conservatively applied to the proposed Qume & Commerce development:

- ITE 130 Industrial Park
    - Typical Function – An industrial park contains a number of industrial or related facilities. It is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities—some with a large number of small businesses and others with one or two dominant industries.

Baseline Vehicle Trips

Baseline vehicle trips for the proposed project (excluding trip adjustments) are anticipated to generate a gross total of 2,408 daily trips, 243 AM peak hour trips, and 243 PM peak hour vehicle trips. Of the AM peak hour trips, approximately 197 trips will be inbound to the project and 46 trips will be outbound from the project. For the PM peak hour trips, approximately 53 trips are inbound while 190 trips are outbound.

Vehicle Trip Reductions

Per the per the 2020 *Transportation Analysis Handbook*, an internal capture reduction can be applied based on vehicle-trip reduction rates from the *VTA Transportation Impact Analysis Guidelines*. An internal capture reduction was not applied to the project, since it does not contain an applicable mixed land use.

A location-based mode share trip reduction was applied. This adjustment is a function of multimodal connectivity and accounts for greater mode share for projects located in urban or transit developed areas. From Table 5 and Table 6 of the *Transportation Analysis Handbook*, the project location is designated as a "Suburb with multi-family housing" area with a vehicle mode share of 92 percent for industrial land uses. Therefore, an 8% mode share trip reduction was assumed to the project.

Per the *Transportation Analysis Handbook*, identified VMT reduction strategies will also encourage reductions in vehicle-trips generated by the project. For commercial and industrial projects, it is assumed that every percent reduction in per-employee VMT is equivalent to one percent reduction in peak hour vehicle trips. From the City's VMT Evaluation Tool, the existing VMT is 14.82 and the project

with VMT reduction strategies identified in Section 3 would generate a VMT of 13.65. Therefore, a VMT vehicle-trip reduction of 8.1% was applied to the project.

Total gross vehicle trips for the proposed project (including trip adjustments) are to be 2,035 daily trips, 204 AM peak hour trips, and 204 PM peak hour vehicle trips. Of the AM peak hour trips, approximately 166 trips will be inbound to the project and 38 trips will be outbound from the project. For the PM peak hour trips, approximately 44 trips will be inbound, while 160 trips are outbound.

Existing Trip Credit

The project will also involve demolishing the existing office / industrial buildings at Qume & Commerce, and the land use could be eligible for an existing use trip credit. Per City direction, the existing use trip credit for the site was estimated by applying ITE trip generation rates to the number of on-site employees from the previous tenant. Pre-COVID tenant data from the past few years confirmed that the existing Becton Dickinson site operated with approximately 1,150 employees on-site. In addition, ITE 760 Research and Development Center rates were conservatively applied due to the operations and use of the existing site. A location-based mode share trip reduction of 8% was also applied to the existing trip credits because the existing site is designated as a "Suburb with multi-family housing" with a mode share of 92% for industrial land uses. Therefore, an existing trip credit of 3,565 daily, 423 AM peak hour trips, and 402 PM peak hour trips was applied to the project. No VMT vehicle trip reductions were taken for the existing land use. The applicant confirmed that there were no TDM measures implemented at the existing site.

Net Vehicle Project Trips

Development of the proposed project with all applicable trip reductions and credits is anticipated to generate a net total of 0 additional daily trips, 0 AM, and 0 PM peak hour trips to the roadway network. **Table 4** provides a summary of the proposed trip generation and trip reductions/credits.

Table 4: Project Trip Generation

LAND USE / DESCRIPTION	PROJECT SIZE	TOTAL DAILY TRIPS	AM PEAK TRIPS			PM PEAK TRIPS		
			TOTAL	IN	/ OUT	TOTAL	IN	/ OUT
Trip Generation Rates (ITE)								
Industrial Park [ITE 130]	Per 1,000 Sq Ft	3.37	0.34	81%	/ 19%	0.34	22%	/ 78%
Research & Development Center [ITE 760]	Per Employee(s)	3.37	0.40	85%	/ 15%	0.38	12%	/ 88%
1. Baseline Vehicle Trips for Project								
Qume & Commerce Scheme 2	714.491 1,000 Sq Ft	2,408	243	197	/ 46	243	53	/ 190
Baseline Project Vehicle-Trips		**2,408**	**243**	**197**	**/ 46**	**243**	**53**	**/ 190**
2. Location-based Mode Share Adjustments								
Suburb With Multi-Family (Mode Share)	-8.0%	(193)	(20)	(16)	/ (4)	(20)	(5)	/ (15)
Project Vehicle-Trips After Reduction		**2,215**	**223**	**181**	**/ 42**	**223**	**48**	**/ 175**
3. Project Trip Adjustments								
VMT Vehicle-Trip Reduction (Model Sketch Tool)	-8.1%	(180)	(19)	(15)	/ (4)	(19)	(4)	/ (15)
Project Vehicle-Trips After Reduction		**2,035**	**204**	**166**	**/ 38**	**204**	**44**	**/ 160**
4. Other Trip Adjustments								
Pass-by and Diverted Link Trips (N/A)	0.0%	0	0	0	/ 0	0	0	/ 0
Existing Uses (R&D Center - Becton Dickinson)	-1150 Employee(s)	(3,876)	(460)	(391)	/ (69)	(437)	(52)	/ (385)
Existing Uses (Location-based Mode Share Adjustments)	8.0%	311	37	32	/ 6	35	5	/ 31
Other Trip Adjustment Subtotal		**(3,565)**	**(423)**	**(359)**	**/ (63)**	**(402)**	**(47)**	**/ (354)**
Baseline Project Vehicle-Trips		**2,408**	**243**	**197**	**/ 46**	**243**	**53**	**/ 190**
Gross Project Vehicle-Trips		**2,035**	**204**	**166**	**/ 38**	**204**	**44**	**/ 160**
Net Project Vehicle-Trips		**(1,530)**	**(219)**	**(193)**	**/ (25)**	**(198)**	**(3)**	**/ (194)**
Final Net Project Vehicle-Trips (For LOS Analysis)		**0**	**0**	**0**	**/ 0**	**0**	**0**	**/ 0**

Notes:

Industrial Park Land Uses assumed based on latest proposed site plan from Herdman Architecture & Design

Daily, AM, and PM trips based on average land use rates from the Institute of Traffic Engineers Trip Generation 11th Edition (September 2021)

A 8% Mode Share Reduction from San Jose Transportation Analysis Handbook 2020 was applied since the project is located in an "Suburb with Multi-Family Housing" area.

A 8.1% VMT Vehicle Trip Reduction from San Jose Transportation Analysis Handbook 2020 was applied since the project is implementing VMT reduction strategies to reduce the project's per employee industrial VMT from 14.81 to 13.65.

Existing on-site use and employee data obtained from project applicant and existing tenant (Becton Dickinson). ITE rates per employee conservatively applied to project site for analysis purposes. Only location-based mode share adjustements were credited to the existing site. No VMT vehicle trip reductions were taken for the existing land use. The applicant confirmed that there were no TDM measures implemented at the existing site.

4.3 Project Trip Distribution and Assignment

Due to the nature of the proposed development, vehicle project trips are anticipated to access the I-680 and I-880 regional freeways. Trip distribution and assignment assumptions for the Qume & Commerce project were based on the project driveway location, the freeway ramp location, community characteristics, and professional engineering judgement. The project trips to and from the site are anticipated to access the following regional facilities and destinations with the estimated trip distribution percentages as shown in **Table 5**.

Table 5: Project Trip Distribution

Location	Roadway Origin / Destination	Inbound Trip Distribution (%)	Outbound Trip Distribution (%)
A	Montague Expressway East	4%	4%
B	Montague Expressway West	4%	4%
C	Trade Zone Boulevard East	4%	4%
D	Lundy Avenue South	4%	4%
E	Murphy Avenue West	4%	4%
F	I-800 North	20%	20%
G	I-880 South	20%	20%
H	I-680 North	20%	20%
I	I-680 South	20%	20%

When compared to the existing R&D Center, it was assumed that the distribution to/from the freeway would be similar; however, the employee profile and vehicle types would be different. The local traffic may have a different distribution, but this change was determined to be minimal and does not affect the analysis.

The gross project trip assignments and distributions through the City street network are presented in **Figure 7** and **Figure 8**. At the project driveways, the gross project trip assignments are presented in **Figure 9.** The trip assignment shown represents the shortest paths to and from the project site under ideal traffic conditions.

Figure 7: Gross Project Trip Distribution

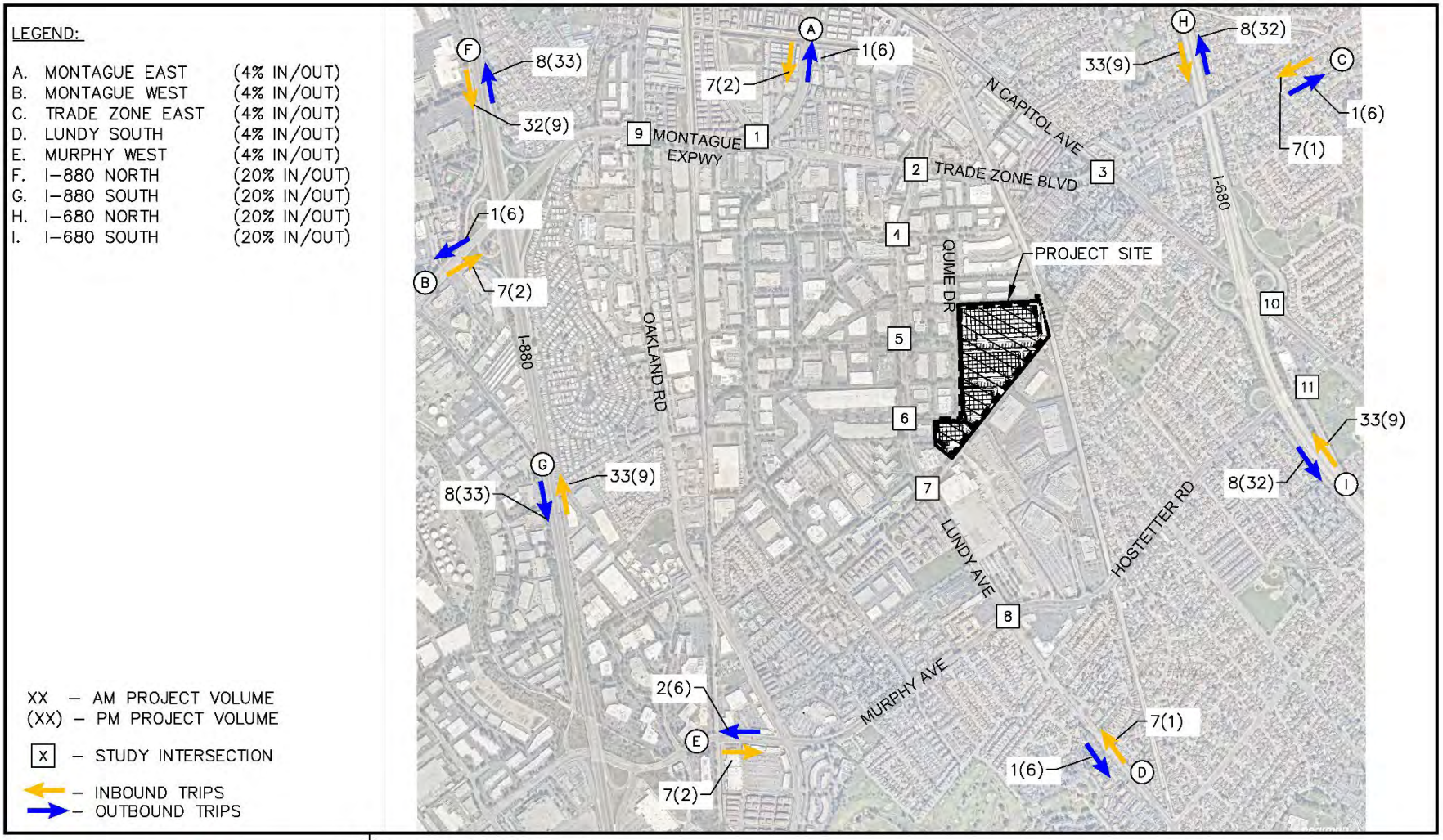
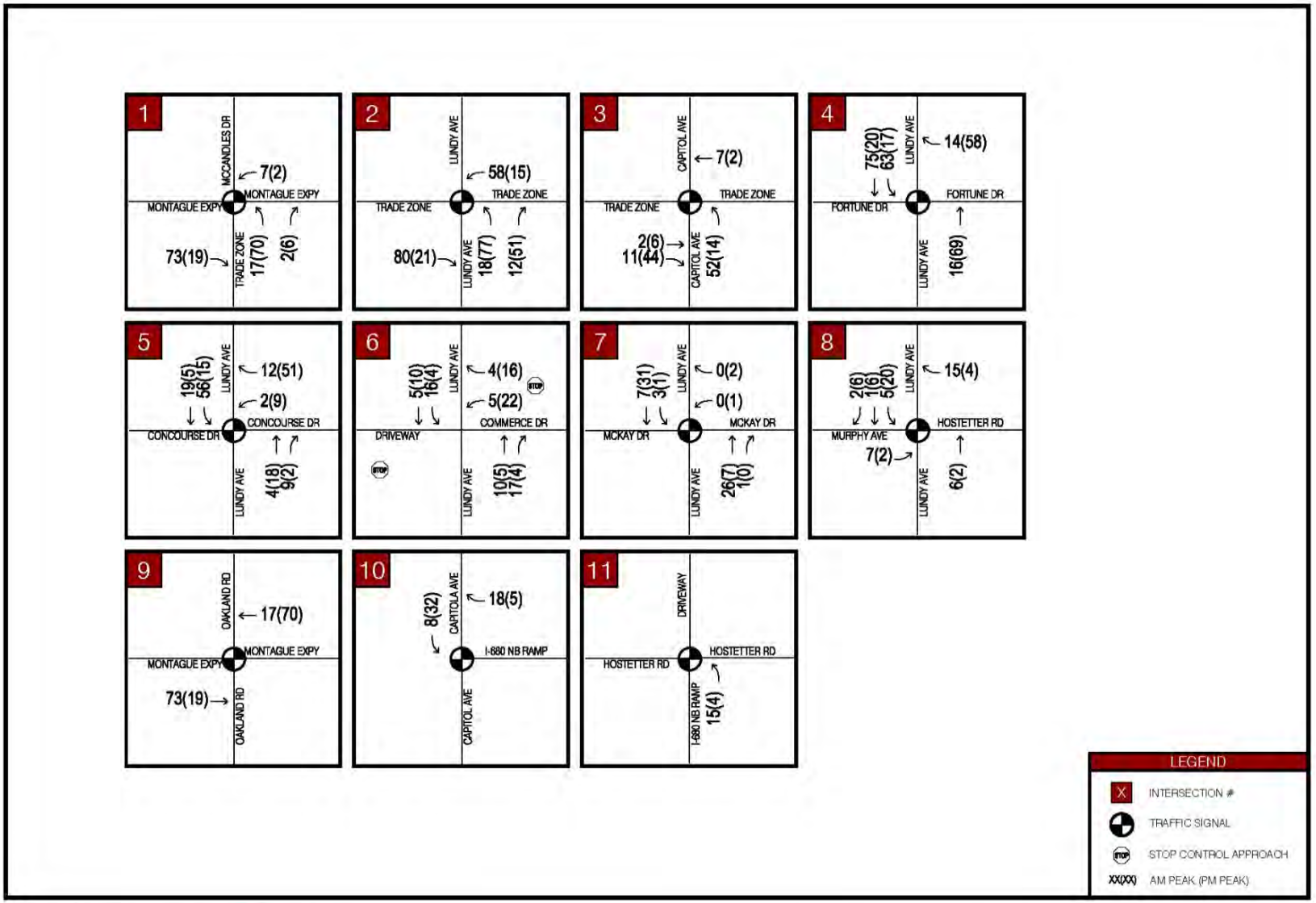


Figure 8: Gross Project Trip Assignment



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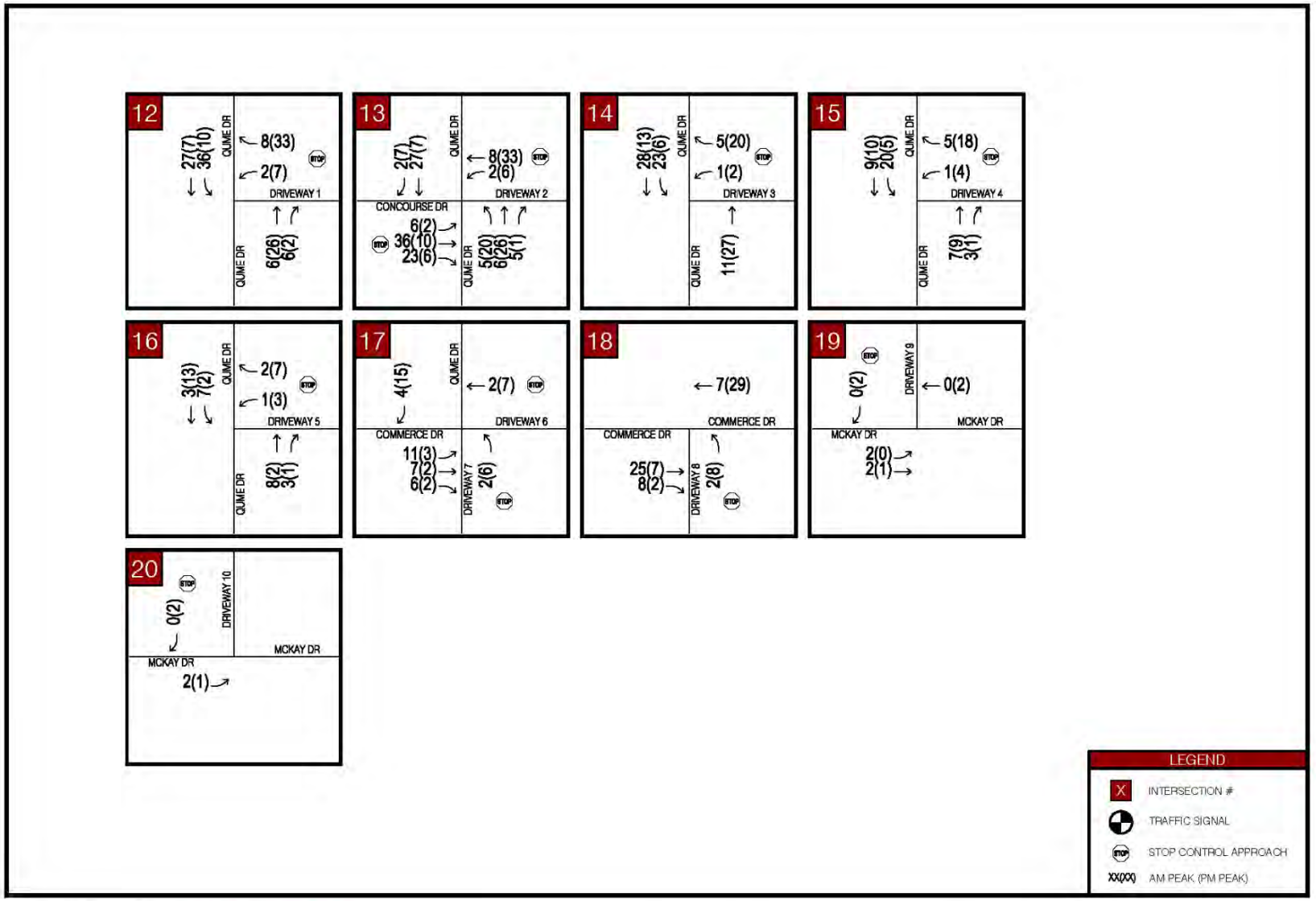
GROSS PROJECT PEAK HOUR TRIP ASSIGNMENT

NW-197469001 FEBRUARY 2022

QUME-COMMERCE DRIVE TRANSPORTATION ANALYSIS

Figure 9: Gross Project Driveway Trip Assignment



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GROSS PROJECT DRIVEWAY PEAK HOUR TRIP ASSIGNMENT

NW-197469001 FEBRUARY 2022

QUME-COMMERCE DRIVE TRANSPORTATION ANALYSIS

5 LTA INTERSECTION OPERATIONS

This chapter describes the local transportation analysis including intersection operations analysis for: existing, background, and background plus project conditions; intersection vehicle queuing analysis; and mitigation measures for any adverse effects to intersection level of service caused by the project.

5.1 Existing Conditions Analysis:

Due to COVID-19 situation, traffic counts for Year 2021 were determined from historic count data. Weekday AM and PM peak hour intersection turning movement volumes for the existing study intersections were obtained from City of San Jose traffic data and augmented with a 1% compound growth rate to Year 2021. These historic counts included vehicles, bicycles, and pedestrians and were collected when local schools were in session and the weather was fair. Traffic volumes at the unsignalized study intersections were supplemented with new turning movement counts on Thursday, September 23, 2021. Peak hour volumes during each intersection's respective peak were conservatively used in this analysis, therefore, some volume imbalances were observed between study intersections. Where imbalances occurred, volumes were conservatively increased slightly above what was counted in the field. Existing intersection lane geometry and peak hour turning movement volumes are shown in **Figure 10** and **Figure 11**, respectively.

Traffic operations were evaluated at the study intersections under Existing conditions, and the results of the analysis are presented in **Table 6**. New intersection turning-movement counts and TRAFFIX output sheets are provided in the **Appendices**.

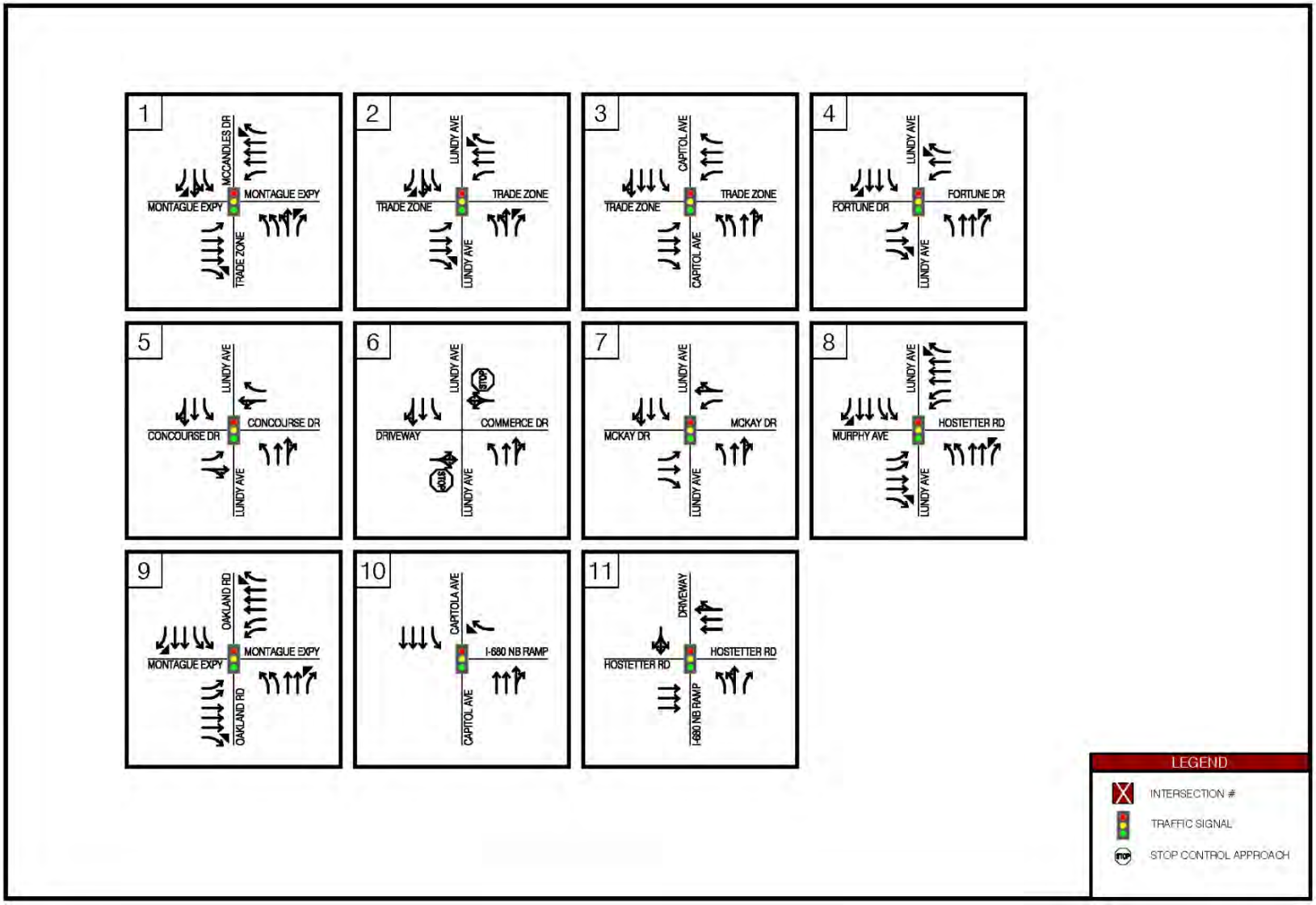
Table 6: Intersection Operations Summary for Existing Conditions

#	Intersection	LOS Criteria	Control	Existing Conditions							
				AM Peak				PM Peak			
				LOS	Delay (sec)[1]	v/c Ratio	Crit. Delay (sec)	LOS	Delay (sec)[1]	v/c Ratio	Crit. Delay (sec)
1	Trade Zone Boulevard / Montague Expressway	E	Signal	D	50.6	0.776	56.1	E	61.3	1.100	115.2
2	Trade Zone Boulevard / Lundy Avenue	D	Signal	C	22.8	0.570	25.7	C	29.0	0.573	32.4
3	Trade Zone Boulevard / N Capitol Avenue	D	Signal	D	36.6	0.579	38.6	D	50.4	0.864	55.7
4	Lundy Avenue / Fortune Drive	D	Signal	B	10.8	0.285	11.5	B	14.7	0.222	11.9
5	Lundy Avenue / Concourse Drive	D	Signal	B	19.7	0.233	20.1	C	23.1	0.356	20.8
6	Lundy Avenue / Commerce Drive	D	SSSC	C	15.9	0.057	1.4	C	22.7	0.238	2.2
7	Lundy Avenue / McKay Drive	D	Signal	C	20.2	0.472	22.1	B	16.6	0.405	13.5
8	Lundy Avenue / Murphy Avenue / Hostetter Road	E	Signal	C	33.0	0.495	31.6	D	37.2	0.632	42.2
9	Oakland Road / Montague Expressway	E	Signal	**F**	**94.5**	**1.122**	**123.0**	D	44.5	0.808	43.2
10	I-680 NB Ramps / N Capitol Avenue	D	Signal	A	9.0	0.221	15.4	A	5.4	0.309	1.0
11	I-680 NB Ramps / Hostetter Road	D	Signal	C	23.3	0.843	24.8	B	17.5	0.585	17.5

As shown above, the following study intersections are anticipated to operate at unacceptable LOS during at least one peak hour under Existing conditions.

- Oakland Road / Montague Expressway (Intersection #9 – Signalized CMP)
  - This signalized CMP intersection is anticipated to operate at LOS F under Existing conditions during the AM peak hour and would experience average vehicle delay greater than the County LOS threshold.

Figure 10: Existing Intersection Lane Geometry



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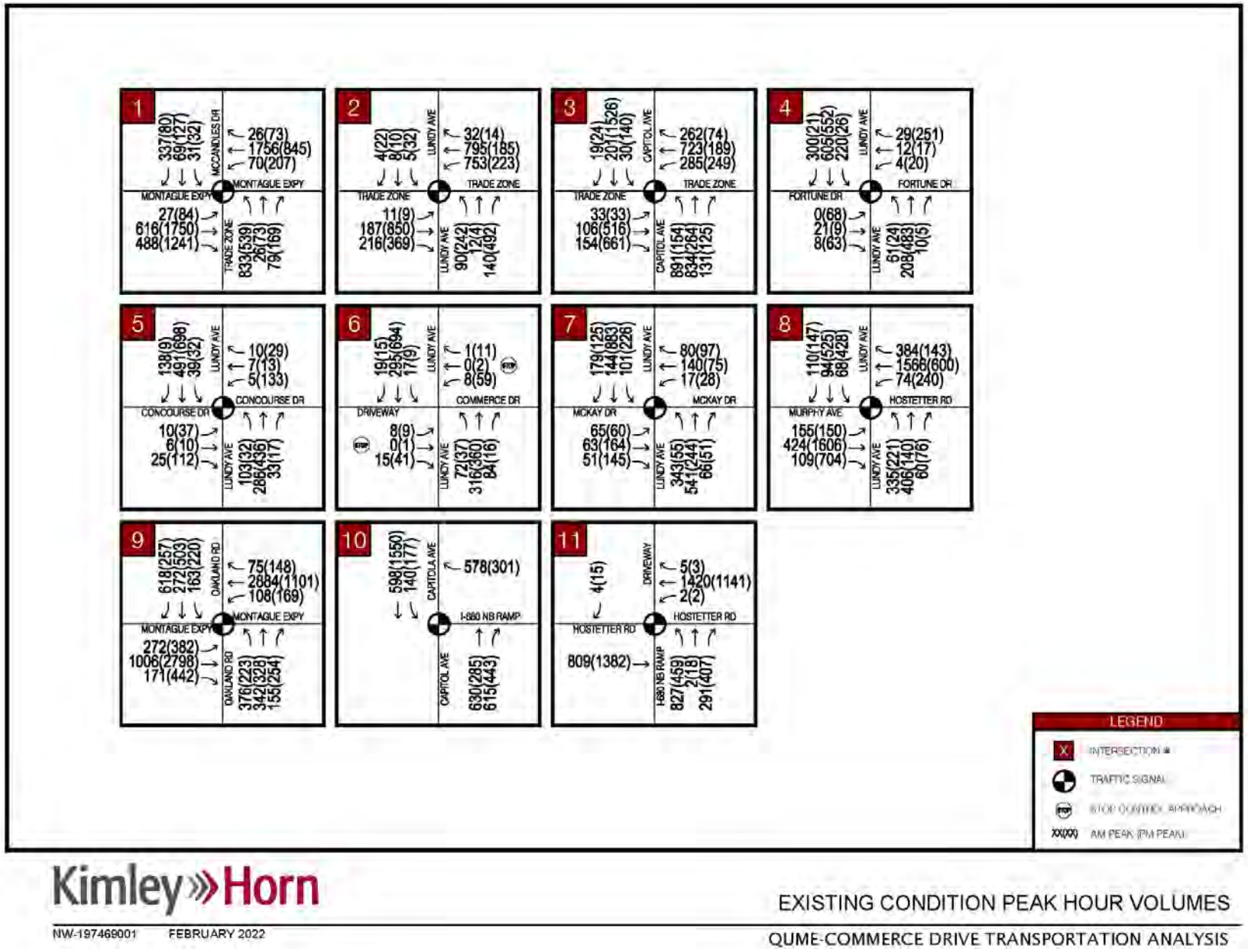
QUME AND COMMERCE DRIVE
EXISTING INTERSECTION LANE GEOMETRY

NW-197469001 FEBRUARY 2022

QUME-COMMERCE DRIVE TRANSPORTATION ANALYSIS

Figure 11: Existing Traffic Volumes



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EXISTING CONDITION PEAK HOUR VOLUMES

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QUME-COMMERCE DRIVE TRANSPORTATION ANALYSIS

5.2 Background Conditions Analysis

Traffic generated from other approved projects in the project study area were obtained from the City of San Jose Approved Trip Inventory (ATI) database attached in the **Appendices**. These ATI traffic volumes were added to the existing traffic counts to generate the Background baseline scenario and include the following local projects.

- North San Jose Area Development
- CL15-054 (3-14457) Cilker Office/Industrial
- H14-020 (3-04341) Supermicro Office/Industrial
- H14-011 (3-18810) Homewood Suites Hotel
- PDC03-108 Off (3-16680) Berryessa Flea Market Office
- PDC03-108 Res (3-16680) Berryessa Flea Market Residential
- PDC03-108 Ret (3-16680) Berryessa Flea Market Retail
- PDC88-08-097 (3-06700) Brancato Residential
- PD13-012 (3-09684) South Bay Office/Industrial
- PD13-039 (3-18698) Trammel Crow R&D
- PD14-007 (3-18698) Trammel Crow Manufacturing
- PRE05-430 Comm (3-12552) Pepper Lane Retail/Commercial

Traffic operations for the study intersections under Background conditions are shown below in **Table 7** and **Figure 12**.

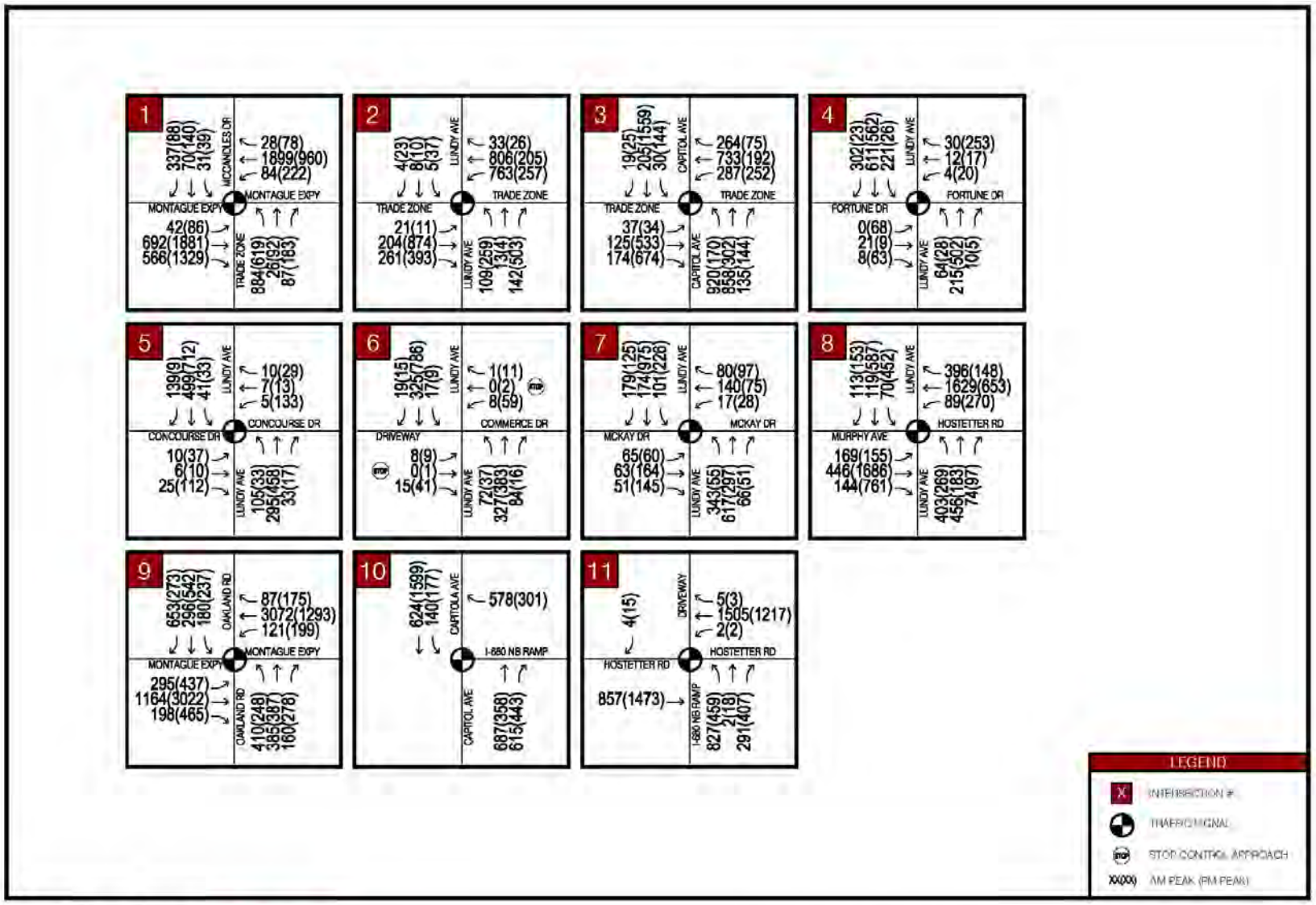
Table 7: Intersection Operations Summary for Background Conditions

#	Intersection	LOS Criteria	Control	Background Conditons							
				AM Peak				PM Peak			
				LOS	Delay (sec)[1]	v/c Ratio	Crit. Delay (sec)	LOS	Delay (sec)[1]	v/c Ratio	Crit. Delay (sec)
1	Trade Zone Boulevard / Montague Expressway	E	Signal	D	51.4	0.815	57.8	E	75.2	1.180	146.4
2	Trade Zone Boulevard / Lundy Avenue	D	Signal	C	25.7	0.587	27.0	C	29.5	0.589	32.7
3	Trade Zone Boulevard / N Capitol Avenue	D	Signal	D	36.8	0.595	39.0	D	51.6	0.881	57.4
4	Lundy Avenue / Fortune Drive	D	Signal	B	11.0	0.289	11.7	B	14.6	0.228	11.8
5	Lundy Avenue / Concourse Drive	D	Signal	B	19.7	0.237	20.1	C	22.9	0.361	20.8
6	Lundy Avenue / Commerce Drive	D	SSSC	C	16.4	0.059	1.3	D	25.8	0.269	2.2
7	Lundy Avenue / McKay Drive	D	Signal	C	20.0	0.472	22.1	B	16.4	0.433	13.1
8	Lundy Avenue / Murphy Avenue / Hostetter Road	E	Signal	C	34.6	0.542	34.3	D	40.0	0.734	48.7
9	Oakland Road / Montague Expressway	E	Signal	**F**	**112.4**	**1.195**	**152.9**	D	48.6	0.881	49.1
10	I-680 NB Ramps / N Capitol Avenue	D	Signal	A	8.8	0.233	14.8	A	5.8	0.319	1.0
11	I-680 NB Ramps / Hostetter Road	D	Signal	C	23.8	0.860	25.8	B	17.4	0.602	17.6

As shown above, the following study intersections are anticipated to operate at unacceptable LOS during at least one peak hour under Background conditions.

- Oakland Road / Montague Expressway (Intersection #9 – Signalized CMP)
    - This signalized CMP intersection is anticipated to operate at LOS F under Background conditions during the AM peak hour and would experience average vehicle delay greater than the County LOS threshold.

Figure 12: Background Traffic Volumes



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BACKGROUND CONDITION PEAK HOUR VOLUMES

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QUME-COMMERCE DRIVE TRANSPORTATION ANALYSIS

5.3 Project Conditions Analysis

The project is not anticipated to create an adverse effect to the intersection delay because the net trip generation is zero. Therefore, no LOS has been provided for the Background Plus Project Conditions.

5.4 Signal Warrant Analysis

Based on City direction, a signal warrant study was conducted at the Lundy Avenue / Commerce Drive minor stop-controlled intersection.

MUTCD Signal Warrant Criteria

A signal warrant analysis was conducted based on Section 4C.01 of the California Manual on Uniform Traffic Control Devices (MUTCD) 2014 Edition Revision 5 standards. A detailed explanation of each signal warrant criteria is attached in the **Appendices**. It should be noted that the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal. Per MUTCD, the following warrant criteria should be considered in an engineering study for a signal installation:

- Warrant 1 Eight Hour Vehicular Volume
- Warrant 2 Four Hour Vehicular Volume
- Warrant 3 Peak Hour
- Warrant 4 Pedestrian Volume
- Warrant 5 School Crossing
- Warrant 6 Coordinated Signal System
- Warrant 7 Crash Experience
- Warrant 8 Roadway Network
- Warrant 9 Intersection Near A Grade Crossing

MUTCD Signal Warrant Summary

Daily roadway approach volumes and peak hour turning movement counts (7-9 AM and 4-6 PM) at the study intersections were collected on Thursday, September 23, 2021 by National Data & Surveying Services. Collision data at the study intersections within a three-year period was also requested through the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS). The daily traffic counts, peak hour intersection volumes, and applicable SWITRS collision data at the study intersections is summarized in the **Appendices.**

The results of the signal warrant analysis at the study intersection are summarized in **Table 8** and in the **Appendices**. The analysis indicates that the Lundy Avenue / Commerce Drive intersection does not meet the MUTCD signal warrant criteria.

Table 8: MUTCD Signal Warrant Summary

MUTCD Signal Warrant Criteria Result	Lundy Avenue / Commerce Drive
Warrant 1 – Eight Hour Vehicular Volume	No
Warrant 2 - Four Hour Vehicular Volume	No
Warrant 3 - Peak Hour	No
Warrant 4 - Pedestrian Volume	No
Warrant 5 - School Crossing	No
Warrant 6 - Coordinated Signal System	No
Warrant 7 - Crash Experience	No
Warrant 8 - Roadway Network	No
Warrant 9 - Intersection Near A Grade Crossing	No

5.5 Intersection Queue Analysis

Select study intersections near the project site were evaluated for left-turn vehicle queuing capacity and storage analysis for each study scenario and summarized in **Table 9**.

It was observed that insufficient storage has been provided for some movements in the Existing and Background Conditions. The project will not be adding any additional vehicles to these deficiencies; therefore, the project is not anticipated to create an adverse effect to the intersection vehicle queues.

Table 9: Left Turn Queue Analysis

AM PEAK HOUR - LEFT TURN QUEUE																				
DESCRIPTION	#1 TRADE ZONE / MONTAGUE				#2 TRADE ZONE / LUNDY				#4 LUNDY / FORTUNE				#5 LUNDY / CONCOURSE				#6 LUNDY / COMMERCE			
	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL
Existing Conditions																				
95% Queue (veh/ln)	32	3	3	8	4	0	1	31	3	7	0	0	5	2	1	1	1	1	1	1
95% Queue (ft/ln)	800	75	75	200	100	0	25	775	75	175	0	0	125	50	25	25	25	25	25	25
Number of Turn Lanes	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Storage (ft)	1500	200	230	290	880	125	125	290	130	130	125	125	130	130	125	125	130	130	125	125
Sufficient Storage?	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Background Conditions																				
95% Queue (veh/ln)	34	3	5	10	4	0	1	32	3	7	0	0	5	2	1	1	1	1	1	1
95% Queue (ft/ln)	850	75	125	250	100	0	25	800	75	175	0	0	125	50	25	25	25	25	25	25
Number of Turn Lanes	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Storage (ft)	1500	200	230	290	880	125	125	290	130	130	125	125	130	130	125	125	130	130	125	125
Sufficient Storage?	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

PM PEAK HOUR - LEFT TURN QUEUE																				
DESCRIPTION	#1 TRADE ZONE / MONTAGUE				#2 TRADE ZONE / LUNDY				#4 LUNDY / FORTUNE				#5 LUNDY / CONCOURSE				#6 LUNDY / COMMERCE			
	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL	NBL	SBL	EBL	WBL
Existing Conditions																				
95% Queue (veh/ln)	33	4	8	31	7	1	1	15	1	1	3	1	2	2	3	8	1	1	1	1
95% Queue (ft/ln)	825	100	200	775	175	25	25	375	25	25	75	25	50	50	75	200	25	25	25	25
Number of Turn Lanes	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Storage (ft)	1500	200	230	290	880	125	125	290	130	130	125	125	130	130	125	125	130	130	125	125
Sufficient Storage?	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES
Background Conditions																				
95% Queue (veh/ln)	39	5	8	34	8	2	1	17	1	1	3	1	2	2	3	8	1	1	1	1
95% Queue (ft/ln)	975	125	200	850	200	50	25	425	25	25	75	25	50	50	75	200	25	25	25	25
Number of Turn Lanes	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Storage (ft)	1500	200	230	290	880	125	125	290	130	130	125	125	130	130	125	125	130	130	125	125
Sufficient Storage?	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES

The 95th percentile outbound queue at the project driveways are anticipated to be up to 50-feet (2 car length) for the Project scenario during the AM and PM peak. This maximum queue would extend into proposed drive aisle. Vehicles exiting the proposed driveway would be able to access Qume Drive and Commerce Drive when there are sufficient gaps generated between platooning vehicles.

From the trip distribution presented in Section 4, the total gross vehicles exiting the project site for the PM peak hour is 196 trips while the gross outbound trips at a single project driveway is 40 PM trips. This maximum outbound trip rate at the project driveway is equivalent to a rate of 1.5 vehicles per minute. The driveway vehicle queue is not expected to create an adverse effect to roadway on-site traffic operations.

5.6 Freeway Queue Analysis

Per City direction, an analysis of metered freeway on-ramps providing access to I-880 from the project site was performed to identify the effects of project traffic on the vehicle queues and wait times at the metered on-ramps. The evaluation of the metered freeway on-ramps that would be utilized by project-generated traffic is provided for informational purposes only.

The study freeway on-ramps and the peak traffic period when their meters are operating are as follows:

- I-880 NB Loop On-Ramp at Montague Expressway (NB Lane 1 – AM Peak)
- I-880 NB On-Ramp at Montague Expressway (NB Lane 2 – AM Peak)
- I-880 SB Loop On-Ramp at Montague Expressway (SB Lane 1 – PM Peak)
- I-880 SB On-Ramp at Montague Expressway (SB Lane 2 – PM Peak)

The metered freeway on-ramps were evaluated during the AM and PM peak hours of traffic on Wednesday September 29, 2021. Ramp meters were observed to be operating during the peak period in the direction of the commute traffic only. Uncontrolled freeway on-ramps are typically not evaluated since these ramps do not experience measurable queue lengths.

A quantitative assessment of the existing ramp conditions and project traffic estimated to use the metered freeway ramps is discussed below. The existing vehicle queue lengths and meter service rates (the number of vehicles that can go through the meter during a specific time period, or the time the

vehicle at the front of the queue must wait for the ramp meter to turn green) at each of the above metered ramps were measured in the field during the peak hours of traffic.

I-880 NB Ramps at Montague Expressway

The northbound on-ramp has two (2) standard lanes for ramp metering. One queue lane is for vehicles arriving from the loop ramp via eastbound Montague while the other queue lane is for vehicles arriving from the ramp via westbound Montague. Field observations show that the ramp operations are congested during the AM peak hour; however, the observed max vehicle queues do not exceed the available lane storage for both metering lanes. There is little to no congestion during the PM peak hour.

Based on the project distribution discussed in Section 4.2, the project is expected to add approximately 10 AM and 39 PM peak hour trips to the I-880 NB on-ramp. The added project trips are equivalent to an AM rate of one (1) vehicle every 6 minutes and a PM rate of one (1) vehicle every 1.5 minutes which is anticipated to create a minimal increase in vehicle delay and queueing to existing ramp operations.

I-880 SB Ramps at Montague Expressway

The southbound on-ramp has two (2) standard lanes for ramp metering. One queue lane is for vehicles arriving from the loop ramp via westbound Montague while the other queue lane is for vehicles arriving from the ramp via eastbound Montague. Field observations show that the ramp operations are congested during the PM peak hour; however, the observed max vehicle queues do not exceed the available lane storage for both metering lanes. There is little to no congestion during the AM peak hour.

Based on the project distribution discussed in Section 4.2, the project is expected to add approximately 9 AM and 39 PM peak hour trips to the I-880 SB on-ramp. The added project trips are equivalent to an AM rate of one (1) vehicle every 6 minutes and a PM rate of one (1) vehicle every 1.5 minutes which is anticipated to create a minimal increase in vehicle delay and queueing to existing ramp operations.

A summary of the existing ramp queues and ramp metering rates for the northbound and southbound on-ramps at I-880 and Montague Expressway is shown in **Table 10** and the **Appendices**.

Table 10: Ramp Queue Analysis at I-880 & Montague Expressway

Northbound On-Ramps				Southbound On-Ramps			
Time of Day	Observed Vehicle Queue (ft)		Average Ramp Metering Rate (s)	Time of Day	Observed Vehicle Queue (ft)		Average Ramp Metering Rate (s)
	Lane 1 EB Loop	Lane 2 WB On			Lane 1 WB Loop	Lane 2 EB On	
7:05 AM	67	305	-	4:05 PM	141	220	-
7:10 AM	70	370	4.24	4:10 PM	163	196	6.90
7:15 AM	192	400	3.96	4:15 PM	192	66	7.53
7:20 AM	250	433	4.19	4:20 PM	119	233	7.85
7:25 AM	50	465	4.18	4:25 PM	316	105	4.02
7:30 AM	17	430	4.23	4:30 PM	43	133	7.02
7:35 AM	35	515	4.16	4:35 PM	193	168	3.37
7:40 AM	172	430	4.16	4:40 PM	204	101	4.31
7:45 AM	62	308	4.29	4:45 PM	381	66	6.10
7:50 AM	125	308	4.25	4:50 PM	258	168	3.95
7:55 AM	60	370	4.14	4:55 PM	45	33	3.70
8:00 AM	143	300	3.89	5:00 PM	90	35	-
8:05 AM	67	302	4.07	5:05 PM	417	42	5.95
8:10 AM	222	300	4.14	5:10 PM	452	165	4.24
8:15 AM	53	357	4.02	5:15 PM	283	129	5.91
8:20 AM	108	393	4.09	5:20 PM	312	328	7.23
8:25 AM	167	420	4.12	5:25 PM	187	227	7.57
8:30 AM	105	360	4.02	5:30 PM	284	203	7.36
8:35 AM	26	360	3.98	5:35 PM	160	252	5.16
8:40 AM	209	305	4.15	5:40 PM	118	103	5.60
8:45 AM	40	300	4.10	5:45 PM	377	165	4.43
8:50 AM	170	365	4.31	5:50 PM	235	105	3.71
8:55 AM	264	419	4.35	5:55 PM	230	88	5.33
9:00 AM	73	393	-	6:00 PM	161	56	-
Ramp Storage Length (ft)	**1800**	**925**	**-**		**1600**	**800**	**-**
Average Queue (ft)	**114**	**371**	**-**		**223**	**141**	**-**
Max Queue (ft)	**264**	**515**	**-**		**452**	**328**	**-**
Sufficient Ramp Queue Storage?	**Yes**	**Yes**	**-**		**Yes**	**Yes**	**-**

5.7 Adverse Effects and Improvements

This section discusses significant transportation project adverse effects identified under Project conditions as well as planned roadway improvements. Per City guidelines in the 2020 Transportation Analysis Handbook, proposed mitigation measures to address negative adverse effects at a study intersection should prioritize improvements related to alternative transportation modes, parking measures, and/or TDM measures with secondary improvements that increase vehicle capacity to the transportation network.

Project Intersection Adverse Effects

Based on City and CMP intersection operation threshold criteria described in Section 1, the project is not anticipated to generate an adverse effect to the study intersections during the Project scenario.

City Identified Roadway Improvements

As discussed in Section 3, the project would exceed the City's industrial VMT per employee threshold and would need to implement VMT reduction strategies to mitigate the impact. Per City request, the project is determining the feasibility of modifying the existing curb line along the Qume Drive and Commerce Drive frontages. As part of the project's VMT mitigation, the curb line would be extended 10-feet inward towards the roadway centerline to achieve a 40-feet curb to curb roadway width along Qume and Commerce Drive. This project frontage improvement would effectively improve pedestrian access with additional space for wider sidewalk and landscaping features while the narrower street width would help control vehicle speeds.

This multi-modal improvement would need to be coordinated between the project applicant and the City for approval. The project applicant is currently evaluating this improvement.

City Identified Bicycle / Pedestrian Improvements

As discussed in Section 3, the project would exceed the City's industrial VMT per employee threshold and would need to implement VMT reduction strategies to mitigate the impact. Per City request to improve multi-modal access, the project would need to coordinate with the City and implement the following improvement for VMT mitigation:

- Construct an internal bicycle / pedestrian pathway connecting the cul-de-sacs at McKay Drive / Automation Parkway and Commerce Drive / Qume Drive.

This multi-modal improvement would need to be coordinated between the project applicant and the City for approval.

City Identified Transit Improvements

The project is not anticipated to generate an adverse effect to the existing transit network during the Project scenario.

North San Jose Area Development Policy Traffic Fees

The project is not anticipated to generate and net PM trips; therefore, the project will not need to pay the NSJADP TIF.

6 LTA SITE ACCESS AND CIRCULATION

This chapter describes the local transportation analysis including site access and on-site circulation review, effects on bicycle, pedestrian, and transit facilities, construction operations, and neighborhood interface.

6.1 Driveway Site Access

Site access and circulation for the project is based on the latest site plan prepared by the project applicant and is included in the **Appendices**. The Qume & Commerce Drive project provides on-site parking spaces for commercial delivery trucks and employee staff from various driveways. The at-grade parking lots are accessed by the following driveways for each building:

- Building 1 (358,180 square-foot warehouse)
  - Driveway 1 at Qume Drive – Full access for passenger vehicles
  - Driveway 2 at Qume Drive – Full access for passenger and delivery truck vehicles
- Building 2 (202,735 square-foot warehouse)
  - Driveway 3 at Qume Drive – Full access for passenger vehicles
  - Driveway 4 at Qume Drive – Full access for passenger and delivery truck vehicles
- Building 3 (83,751 square-foot warehouse)
  - Driveway 5 at Qume Drive – Full access for passenger vehicles
  - Driveway 6 at Qume Drive – Full access for passenger and delivery truck vehicles (gated)
  - Driveway 10 at McKay Drive – Full access for passenger and delivery truck vehicles (gated)
- Building 4 (69,825 square-foot warehouse)
  - Driveway 7 at Commerce Drive – Full access for passenger vehicles
  - Driveway 8 at Commerce Drive – Full access for passenger and delivery truck vehicles
  - Driveway 9 at McKay Drive – Full access for passenger vehicles (gated)
  - Driveway 11 at McKay Drive - Full access for passenger and delivery truck vehicles (gated)

Per City guidance, driveways should be a minimum of 150 feet from any intersection, and the project satisfies this standard. The proposed driveway locations optimize sight distance and spacing for the proposed site plan. To improve vehicle sight distance of approaching pedestrians and bicycles on Qume Drive and Commerce Drive, it is recommended to provide low clearance landscaping between the back of curb on both sides of the driveway.

Per City Municipal Code 20.90.100 and Table 20-220, the minimum width of the proposed two-way drive aisle is 26-feet. The driveways designed for truck access along Qume Drive, Commerce Drive, and McKay Drive are 32-feet wide at the curb line while the parking lot drive aisles are dimensioned 30 to 40-feet wide.

The City recommends project driveways 1, 3, 5, 7, and 9 which provide passenger vehicle access only to be designed with the City standard width cut of 26-feet.

For project driveways 10 and 11 along McKay Drive, a larger width than the typical 32-feet driveway dimension can be provided based on associated turning templates for the given design vehicle to provide sufficient vehicle access and circulation for entering and exiting vehicles.

Project driveways 6, 9, 10, and 11 will be augmented with automated steel swinging gates to restrict access for authorized employees and truck deliveries only. Gate control at these driveways would be optimized to maintain security, and the gate's rapid opening and closing cycle and setback from the sidewalk would allow vehicles to access the driveway without blocking or impeding traffic flow on the City streets. Gate operations would be controlled with high-speed motors, intercom/keypad posts, and knox box for fire access.

In addition, the standard parking spaces on-site are dimensioned 9-feet by 18-feet while the truck parking spaces are dimensioned 12-feet by 55-feet which satisfy City parking standards.

Vehicles accessing the project driveways would be allowed to make turns in and out the site when there are sufficient vehicle gaps along Qume Drive and Commerce Drive. From the queue analysis results summarized in Section 5, inbound vehicle queues and delays are not expected to be significant issues. For outbound vehicles, on-site vehicle queues are expected during the AM and PM peak due to a combination of inherent unpredictability of vehicle arrivals at driveways, and the random occurrence of gaps in traffic; however, these conditions are typical of driveways in industrial areas.

6.2 Passenger Vehicle and Delivery Van Access and Circulation

Vehicle maneuverability and access for the parking area was analyzed using AutoTURN software which measures design vehicle swept paths and turning through simulation and clearance checks. A passenger car design from the American Association of State Highway and Transportation Officials (AASHTO) was assessed for the internal parking area.

Analysis using the AASHTO template revealed that passenger vehicles could adequately access the driveways on Qume Drive and Commerce Drive, maneuver through the parking lot, and park in the stalls without conflicting into other vehicles or stationary objects. The proposed layout provides sufficient vehicle clearance.

6.3 Heavy Vehicle Truck Access and Circulation

Delivery trucks and heavy vehicles are currently prohibited from stopping or parking along Qume Drive and Commerce Drive along the project frontage. All delivery activity for the project would occur on-site in the designated loading areas.

Per City Municipal Code 20.90.410, a building intended for use by a manufacturing plant, storage facility, warehouse facility, goods display facility, retail store, wholesale store, market, hotel, hospital, mortuary, laundry, dry cleaning establishment, or other use having a floor area of 10,000 square-feet or more shall provide a minimum of one (1) off-street loading space, plus one additional such loading space for each 20,000 square-feet of floor area. The project provides at least 99 trailer parking spaces, and 80 truck loading docks on-site and satisfies the City requirement.

The STAA truck based on AASHTO and the Caltrans Highway Design Manual was assumed as the maximum size delivery truck that would be allowed due to truck route and maneuverability constraints in the North San Jose area and at the project driveway. Fire apparatus and garbage trucks were also checked for site access, and these vehicle dimensions were based on NCHRP 659 – Guide for the Geometric Design of Driveways.

STAA delivery trucks would be able to maneuver on Qume Drive and Commerce Drive adjacent to the project site and access the designated truck driveways to load/unload and exit the site. Turning templates for this delivery vehicle indicate that the proposed 32-feet wide driveway widths provide sufficient vehicle access to and from the project site.

For project driveways 10 and 11 along McKay Drive, a larger width than the typical 32-feet driveway dimension can be provided based on STAA vehicle templates to provide sufficient vehicle access and circulation for entering and exiting vehicles. A 40-foot width is proposed at these driveways.

Access to the truck court from project driveways 6, 9, 10, and 11 will be controlled by automatic open/close gates on Qume, Commerce, and McKay Drive. The AM and PM peak hour truck volume is approximately 29 trucks, or one truck every 2 minutes, that will access any of the project driveways. The time for each gate to open is estimated to be less than 2 minutes and therefore, the truck queues are not expected to exceed one (1) truck length. Given the storage length between each gate and the adjacent street, truck queues are not anticipated to extend in the adjacent street or impact traffic operations at the gated driveways.

Garbage and recycling bins are anticipated to be located near the loading docks or in a designated trash enclosure within the parking lot. Waste collection vehicles would be able to enter the project driveway to pick up bins and exit the site without conflict.

In the event of an emergency, it is assumed that fire apparatus vehicles will stage in the project parking lots, along Qume Drive, or along Commerce Drive. Existing fire hydrants along the project frontage provides direct fire access for emergency personnel. The project driveways are 26-feet wide minimum, provide at least 10-feet high clearance, and satisfies the 20-foot horizontal and 10-foot- vertical minimum access clearances from the 2016 CA Fire Code. Gate control for fire access will be provided with Knox boxes.

Figure 13 through **Figure 24** show site access and vehicle turn templates at the project driveway and on-site parking area for the design vehicles described above.

Figure 13: Passenger Vehicle Access

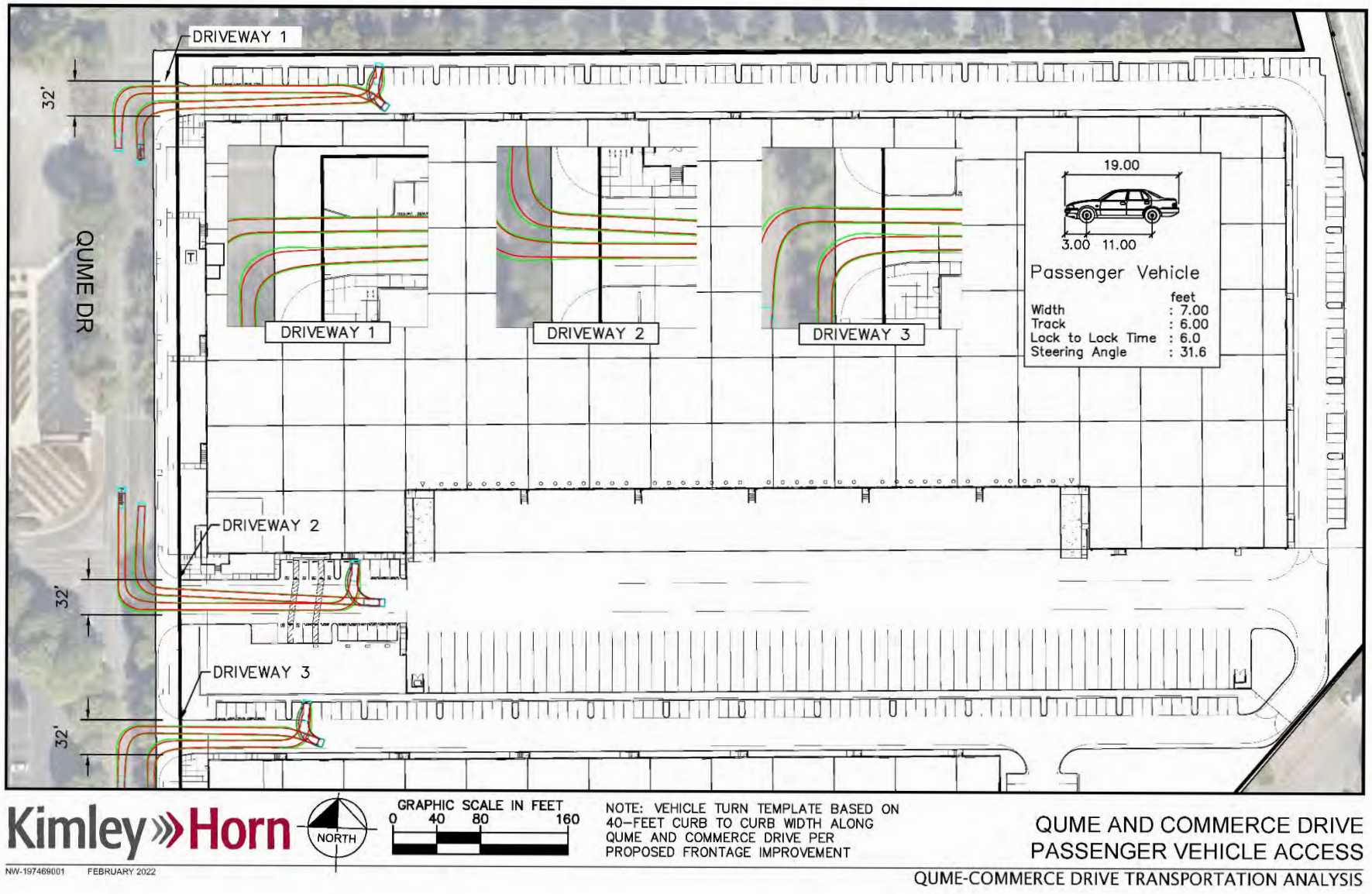


Figure 14: Passenger Vehicle Access

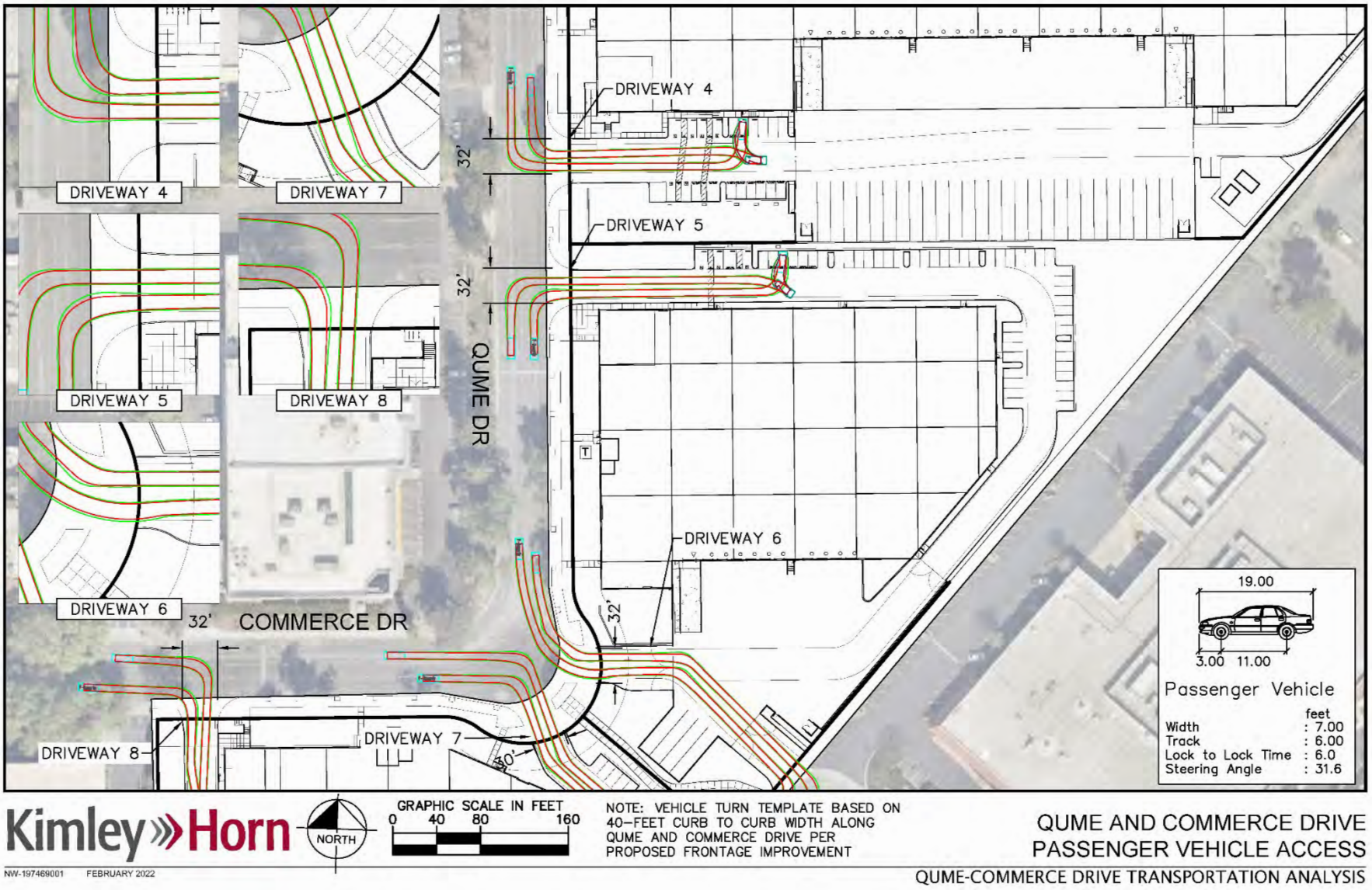


Figure 15: Passenger Vehicle Access

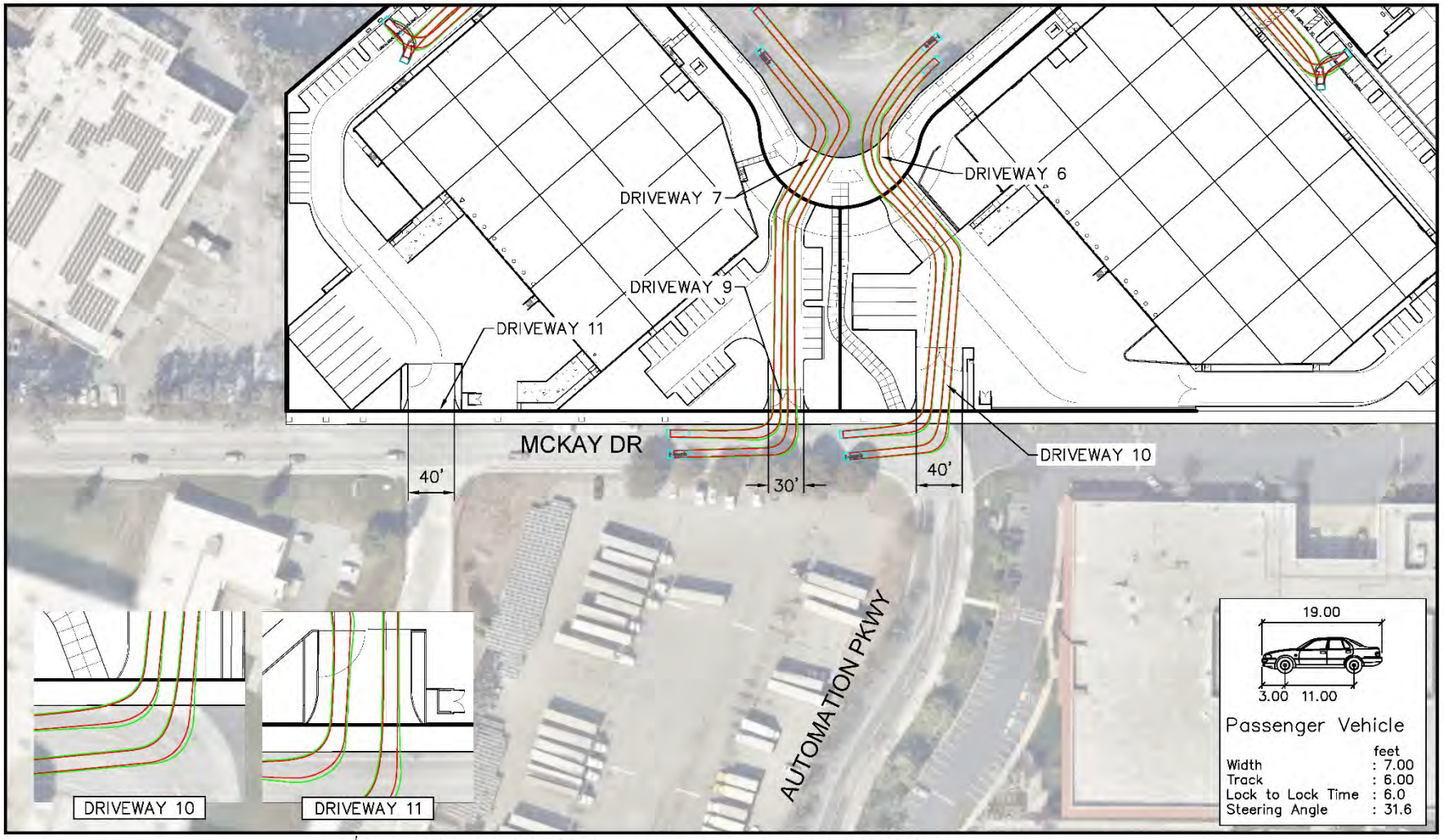


Figure 16: Delivery Truck Vehicle Access

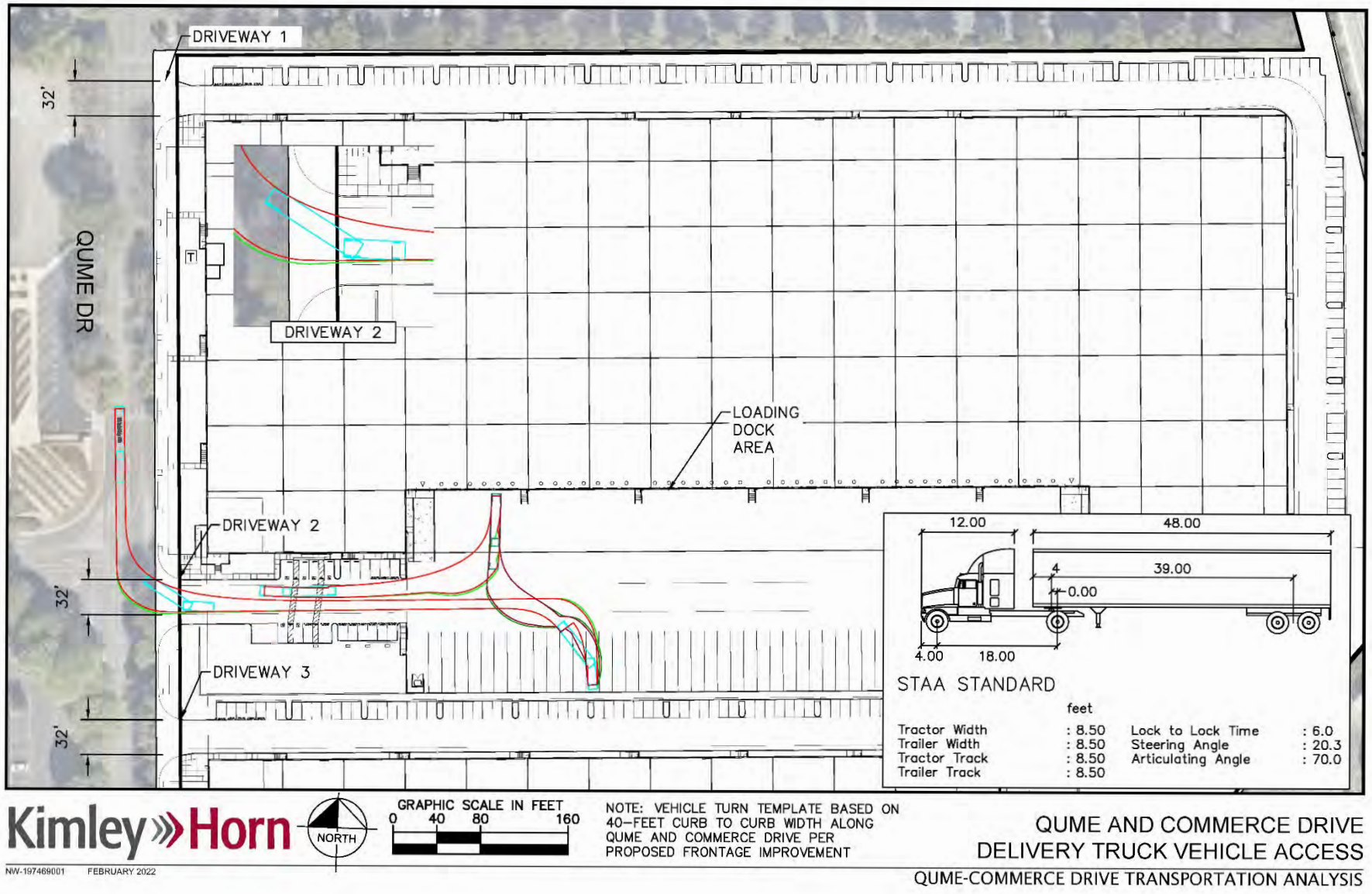


Figure 17: Delivery Truck Vehicle Access

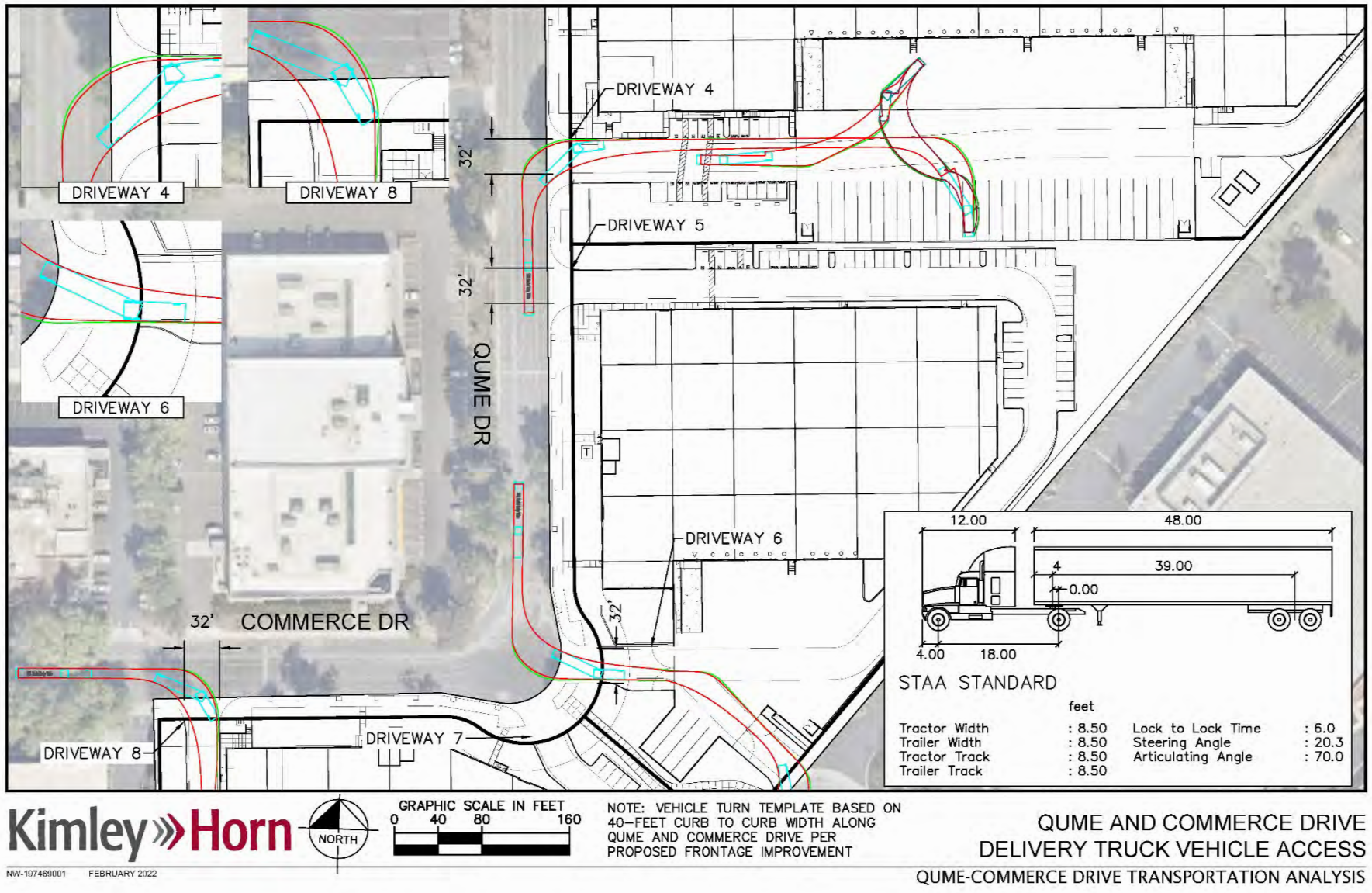


Figure 18: Delivery Truck Vehicle Access

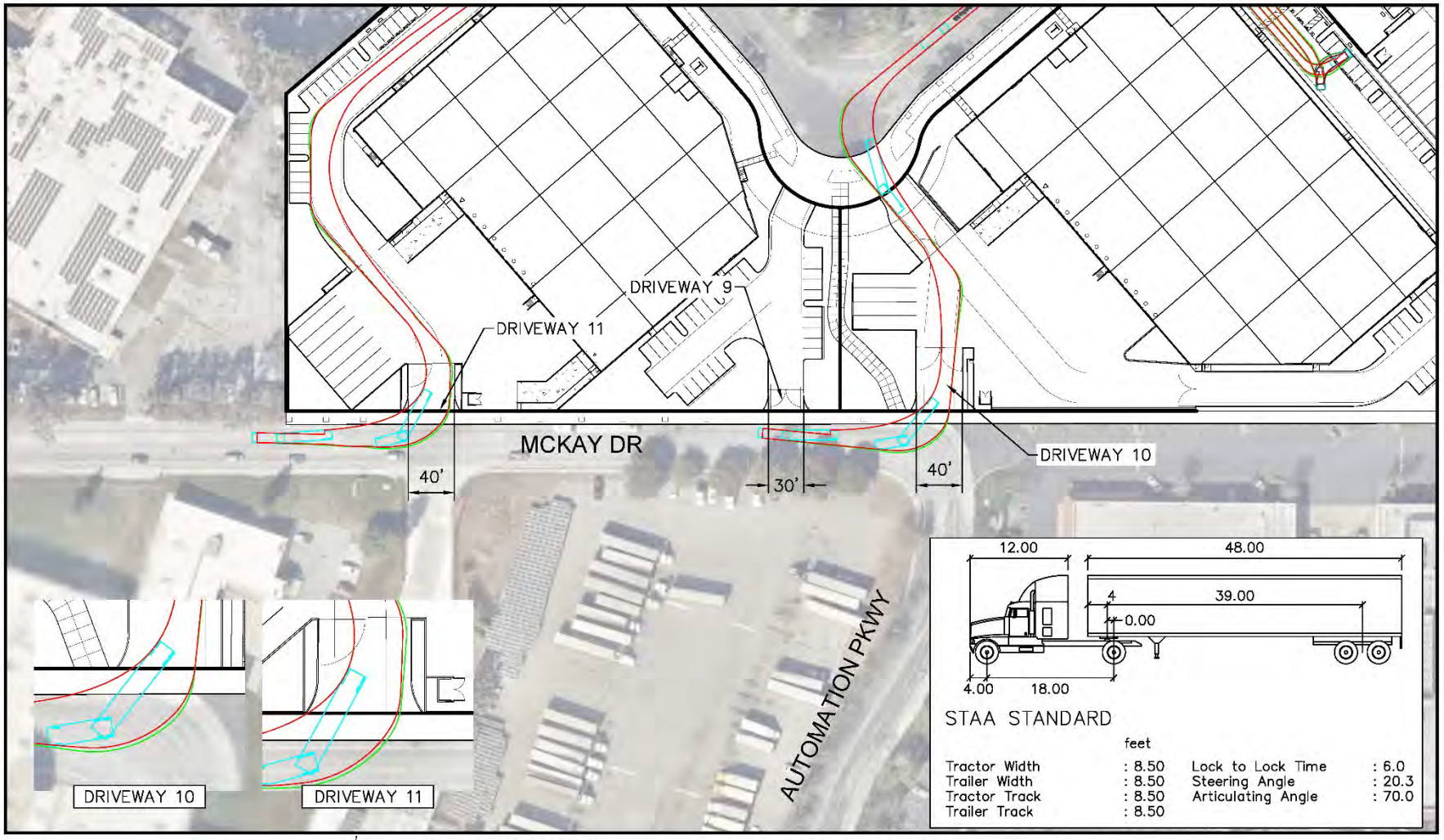


Figure 19: Garbage Truck Access

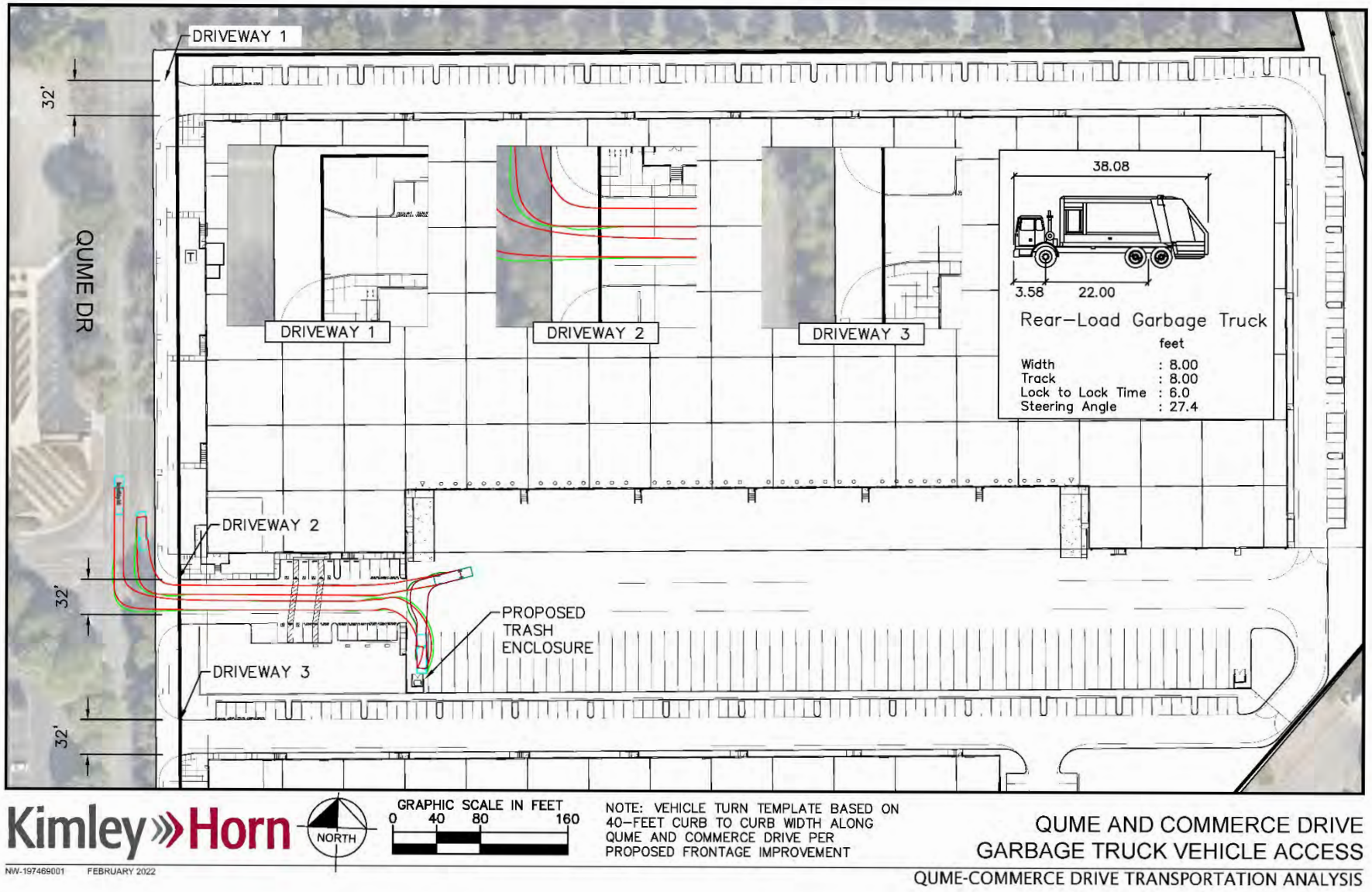


Figure 20: Garbage Truck Access

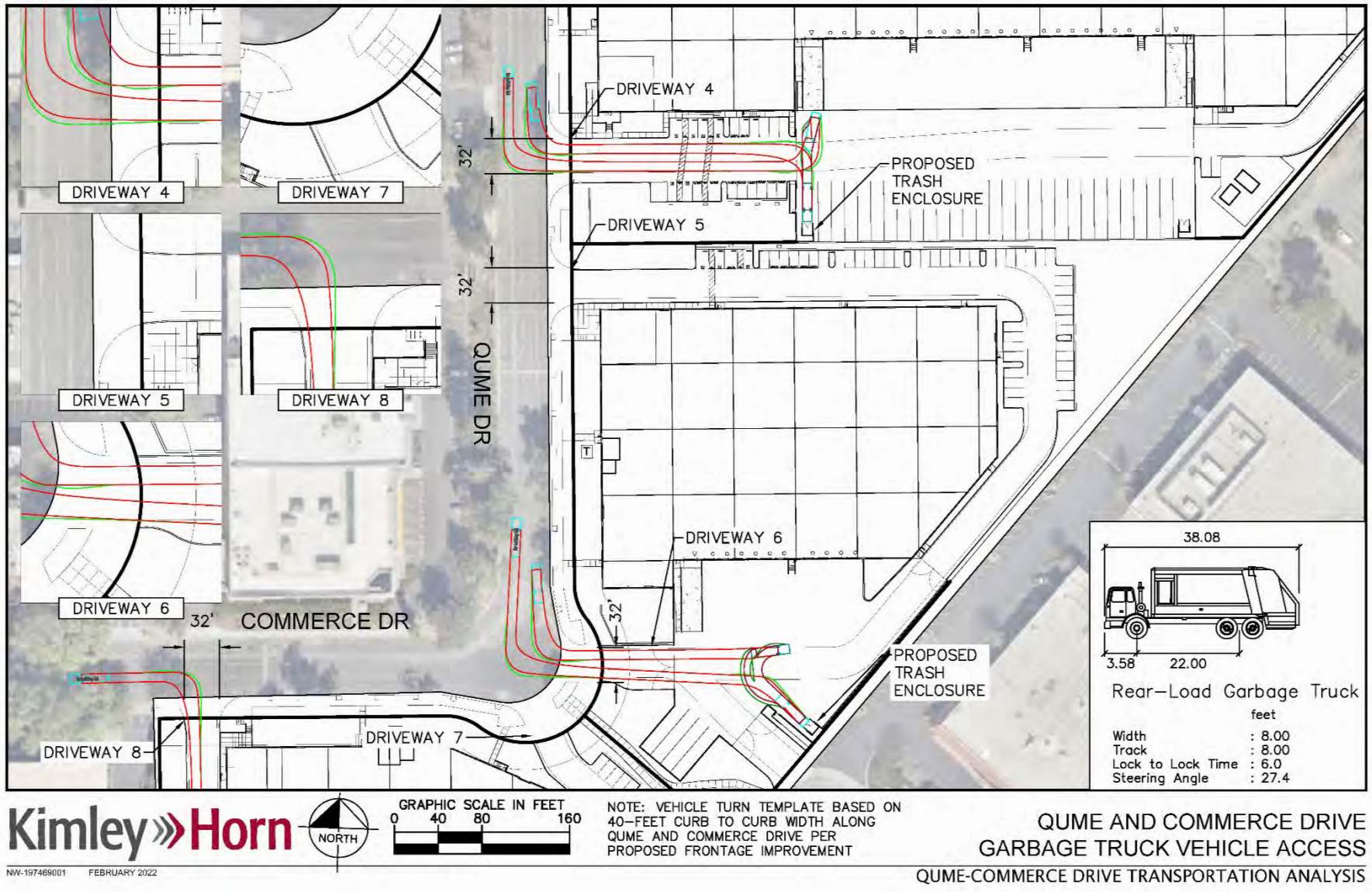


Figure 21: Garbage Truck Access

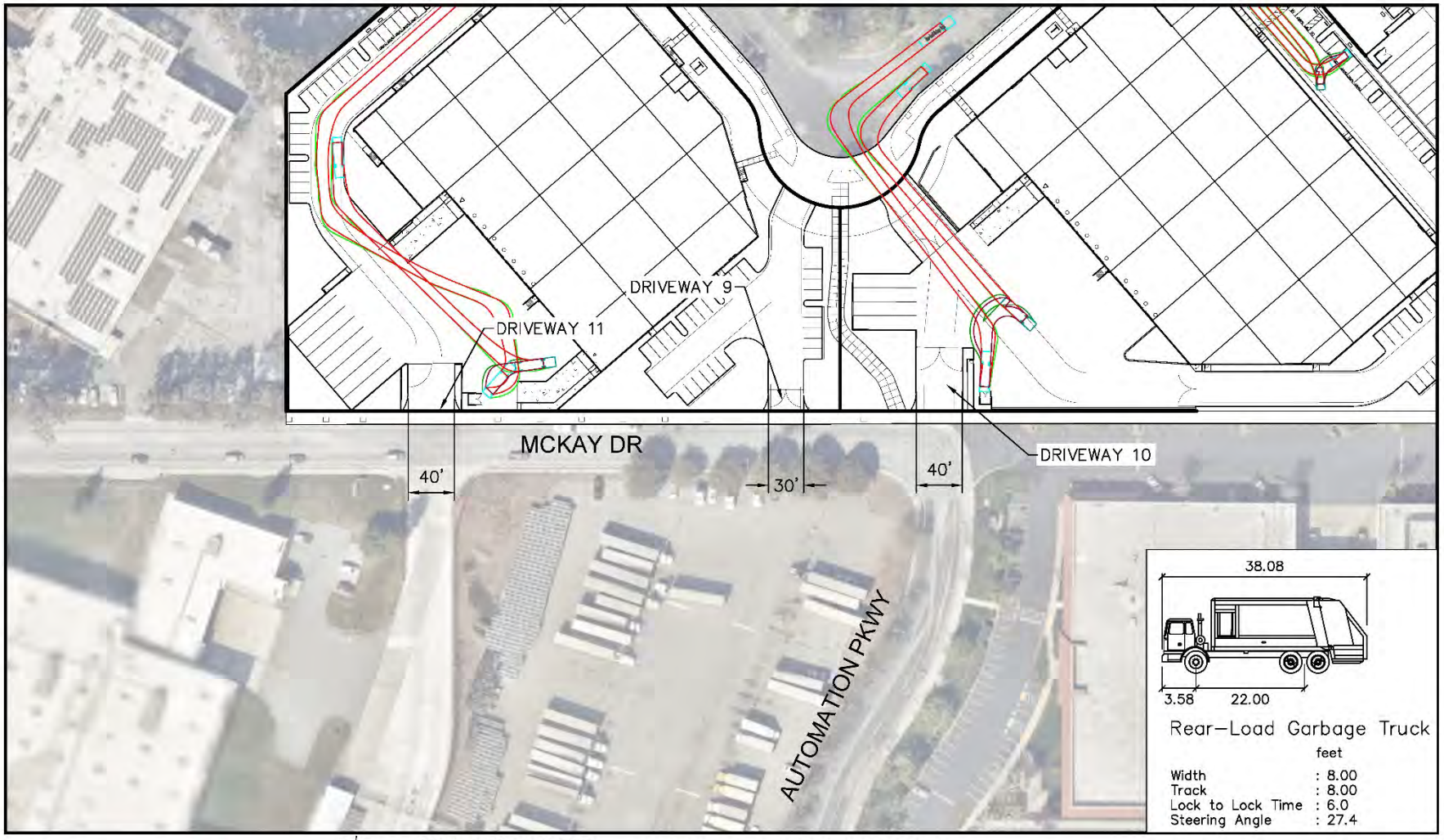


Figure 22: Fire Truck Access

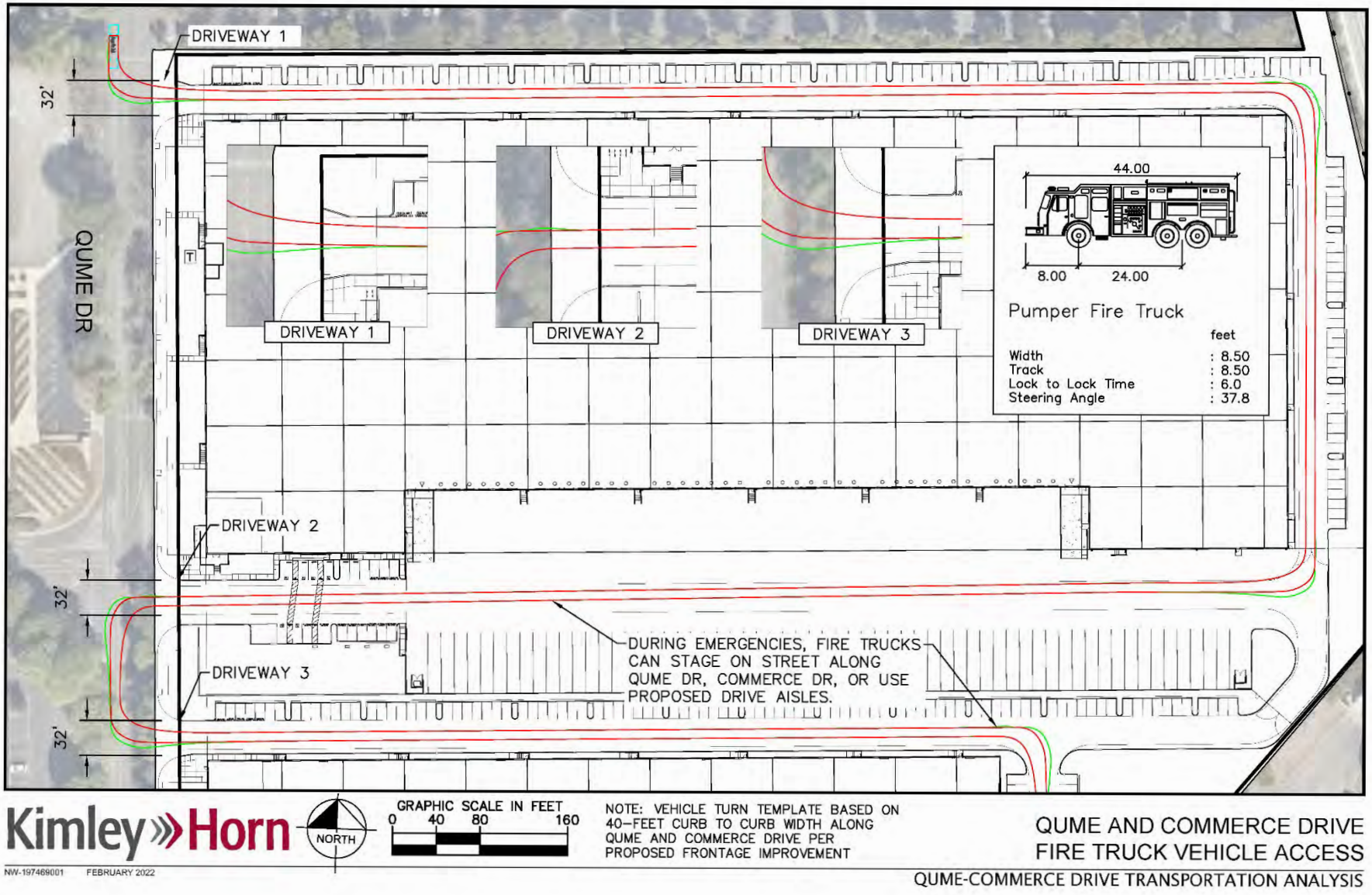


Figure 23: Fire Truck Access

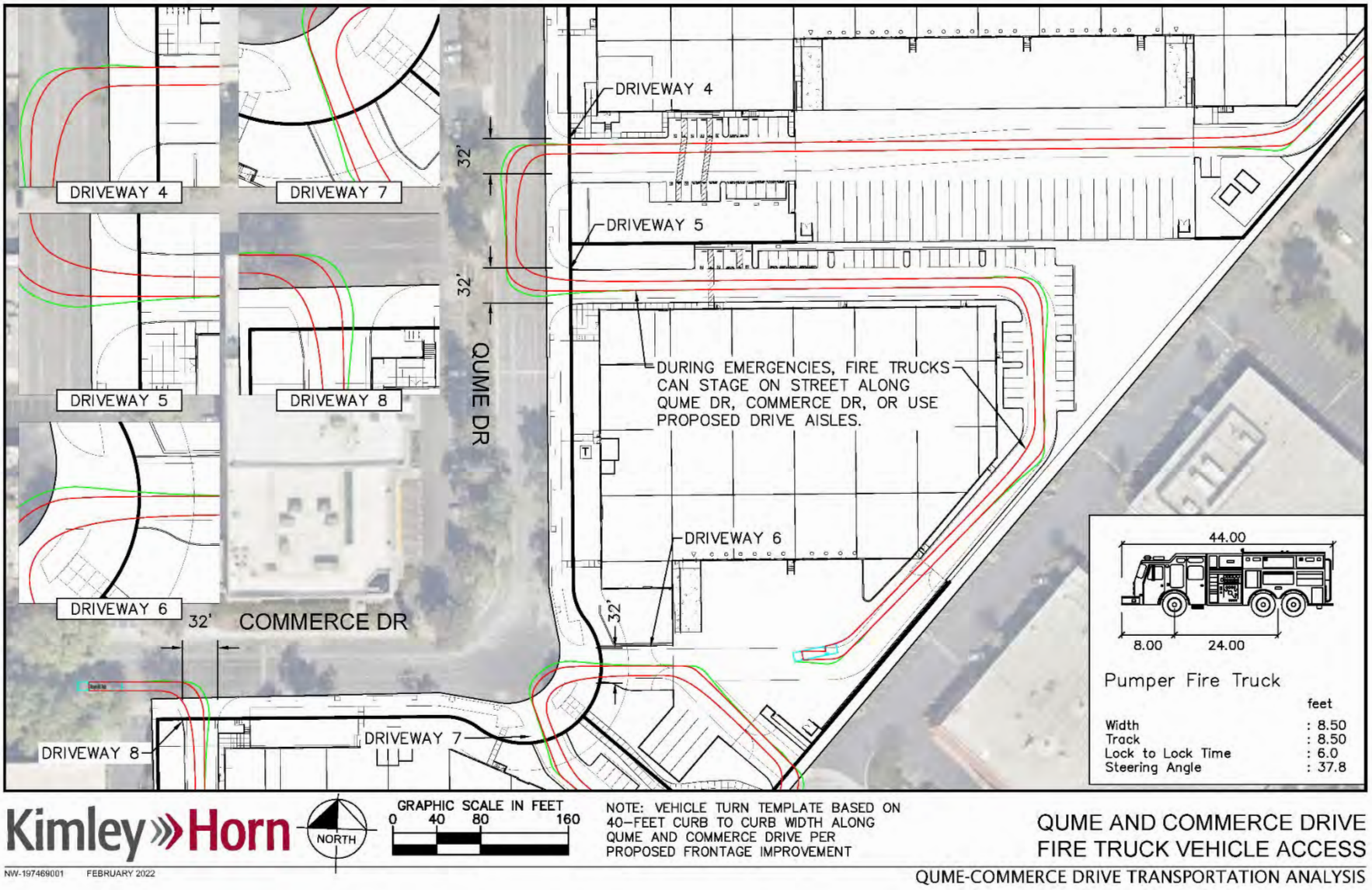
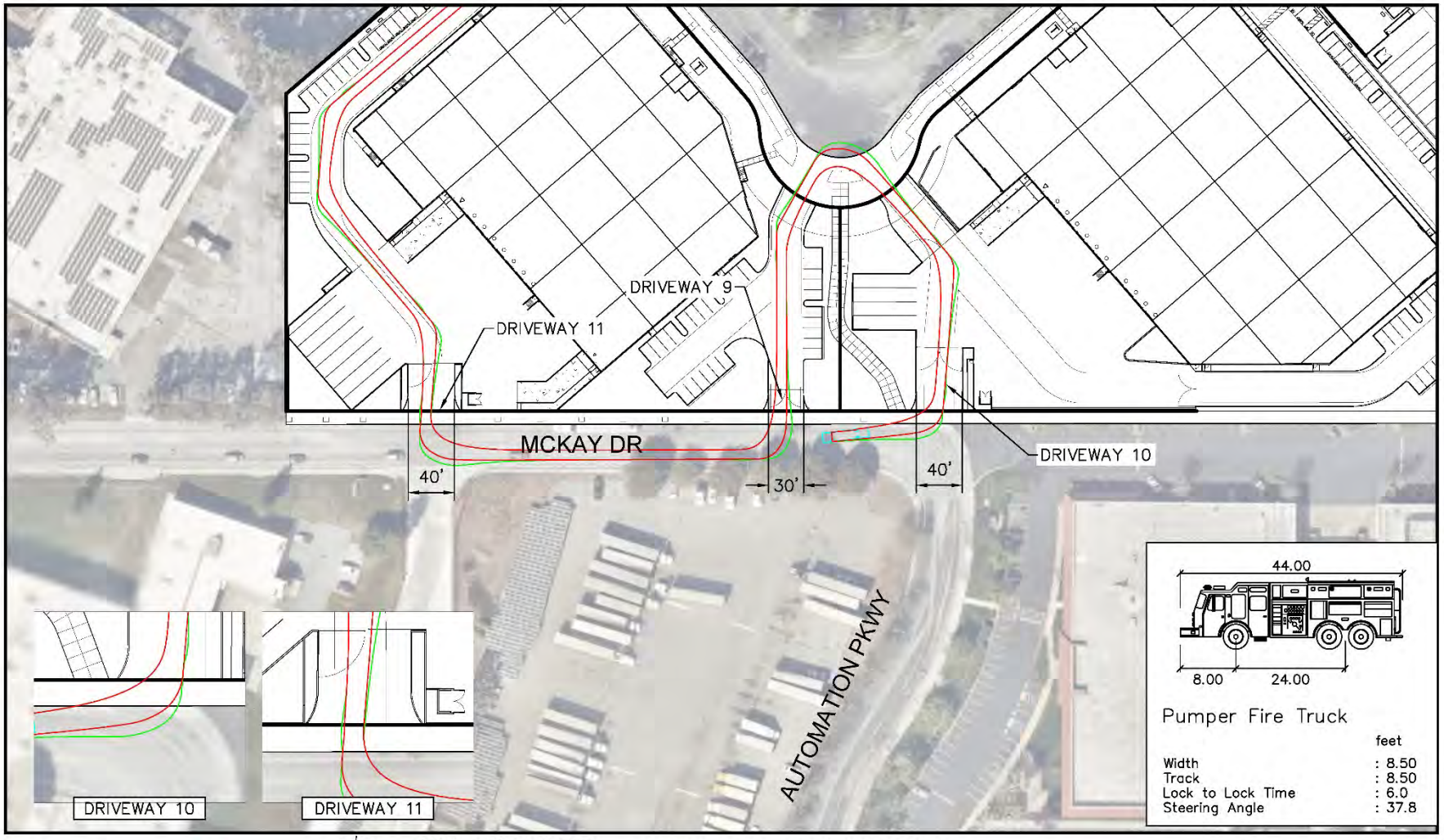


Figure 24: Fire Truck Access



6.4 Vehicle Sight Distance Analysis

A preliminary stopping sight distance and intersection sight distance analysis was conducted to determine the feasibility of the proposed project driveway location. The AASHTO methodology was used in this analysis. The sight distance needed under various assumptions of physical conditions and driver behavior is directly related to vehicle speeds and to the resultant distances traversed during perception-reaction time and braking.

Stopping sight distance is defined as the sum of reaction distance and braking distance. The reaction distance is based on the reaction time of the driver while the braking distance is dependent upon the vehicle speed and the coefficient of friction between the tires and roadway as the vehicle decelerates to a complete stop. This sight distance analysis indicates the minimum visibility that is required for an approaching vehicle to stop safely if a vehicle from the project driveway enters or exits the approaching road. The driver should also have an unobstructed view of the intersection, including any traffic-control devices, and sufficient lengths along the intersecting road to permit the driver to anticipate and avoid potential collisions.

Project Driveway Sight Distance

For vehicles entering Qume, Commerce, McKay, or Automation roadways from the proposed project driveway, the AASHTO method evaluates sight distance from a vehicle exiting the driveway to a vehicle approaching from either direction. The intersection sight distance is defined along intersection approach legs and across their included corners known as departure sight triangles. These specified areas should be clear of obstructions that might block a driver's view of potentially conflicting vehicles. Intersection sight distance is measured from a point 3.5-feet above the existing grade (driver's eye) along the potential driveway to a 3.5-foot object height in the center of the approaching lane on the roadway. A vehicle setback in a stopped position from the edge of shoulder was assumed for determining intersection sight distance.

Minimum sight distance criteria for the potential driveways along the study roadways was determined from the AASHTO Geometric Design of Highways and Streets 7th Edition (Green Book). For the purposes of this analysis, a design speed of 30 mph (25 mph posted speed limit) was assumed along Qume Drive, Commerce Drive, and McKay Drive. At the corner of McKay Drive and Automation Parkway by project driveway 10, a design speed of 20 mph was assumed. AASHTO standard time gap variables for passenger cars stopped on the proposed project driveways were used. Based on the existing traffic control, minimum sight distance was calculated for the following scenarios:

- Stopping Sight Distance on Qume Drive, Commerce Drive, Mckay Drive, and Automation Parkway
- Intersection Sight Distance Case B – Stop control at the proposed project driveways
    - Case B1 – Left turn from the minor road
    - Case B2 – Right turn from the minor road

From Table 9-7 and Table 9-9 of the Green Book, the minimum stopping sight distances is 200 feet. For Case B1 left turn, the intersection sight distance is 335 feet assuming approach grades of 3 percent or less at 30 mph. For Case B2 right turn, the intersection sight distance is 290 feet assuming approach grades of 3 percent or less at 30 mph.

A site visit was taken to measure the available sight distance and departure sight triangles at the proposed driveway locations. From a 5-foot setback from the edge of travel way, the measured available sight distance is over 500 feet in each direction on Qume Drive and Commerce Drive. The measured available sight distance on McKay Drive and Automation Parkway varies. **Table 11** summarizes the intersection and stopping sight distance at the project driveways.

Table 11: Project Driveway Sight Distance

Type	Design Speed (MPH)	Required Sight Distance (ft)	Actual Sight Distance (ft)	Sufficient Sight Distance?
Qume Drive and Commerce Drive (Project Driveways 1 to 8)				
SSD on Primary Road	40	305	>500	Yes
SSD at Curve	20	240	>500	Yes
ISD Case B1 (Left Turn)	40	475	>500	Yes
ISD Case B1 (Left Turn) at Curve	20	115	>500	Yes
ISD Case B2 (Right Turn)	40	385	>500	Yes
McKay Drive and Automation Parkway (Project Driveways 9 to 11)				
SSD on Primary Road	30	200	>500	Yes
SSD at Curve	20	115	115	Yes
SSD Case B1 (Left Turn)	30	355	>500	Yes
SSD Case B1 (Left Turn) at Curve	20	235	>500	Yes
ISD Case B2 (Right Turn)	30	290	>500	Yes
ISD Case B2 (Right Turn) at Curve	20	195	>195	Yes

The proposed project driveway locations satisfy the minimum stopping sight distance required for all approaches on Qume Drive, Commerce Drive, McKay Drive, and Automation Parkway. Vehicles on the road will have sufficient sight distance to react and stop safely if a vehicle from the project driveway enters or exits the road. Vehicles entering the City streets from the project driveway will also have sufficient intersection sight distance to make a left or right turn onto the road per AASHTO scenarios.

Overall, the proposed project driveway locations are feasible and provide sufficient sight distance for traffic conditions. To ensure that exiting vehicles can see bikes and vehicles traveling on the roadway, no parking striped with red curb should be established immediately adjacent to the project driveways. An exhibit comparing the design and measured available stopping and intersection sight distances is shown in **Figure 25** through **Figure 28**.

Figure 25: Sight Distance Analysis (Qume Drive and Commerce Drive)

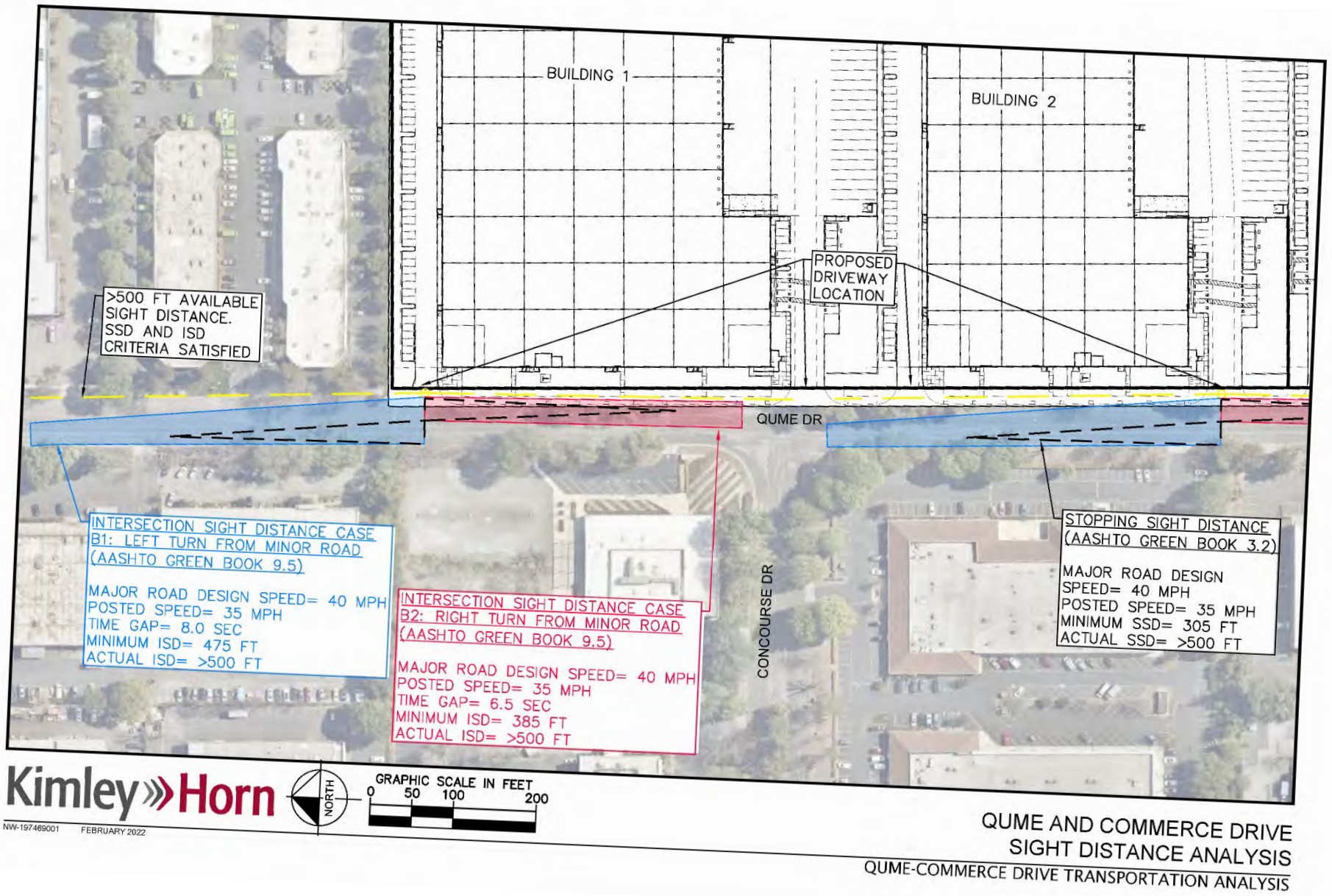


Figure 26: Sight Distance Analysis (Qume Drive and Commerce Drive)

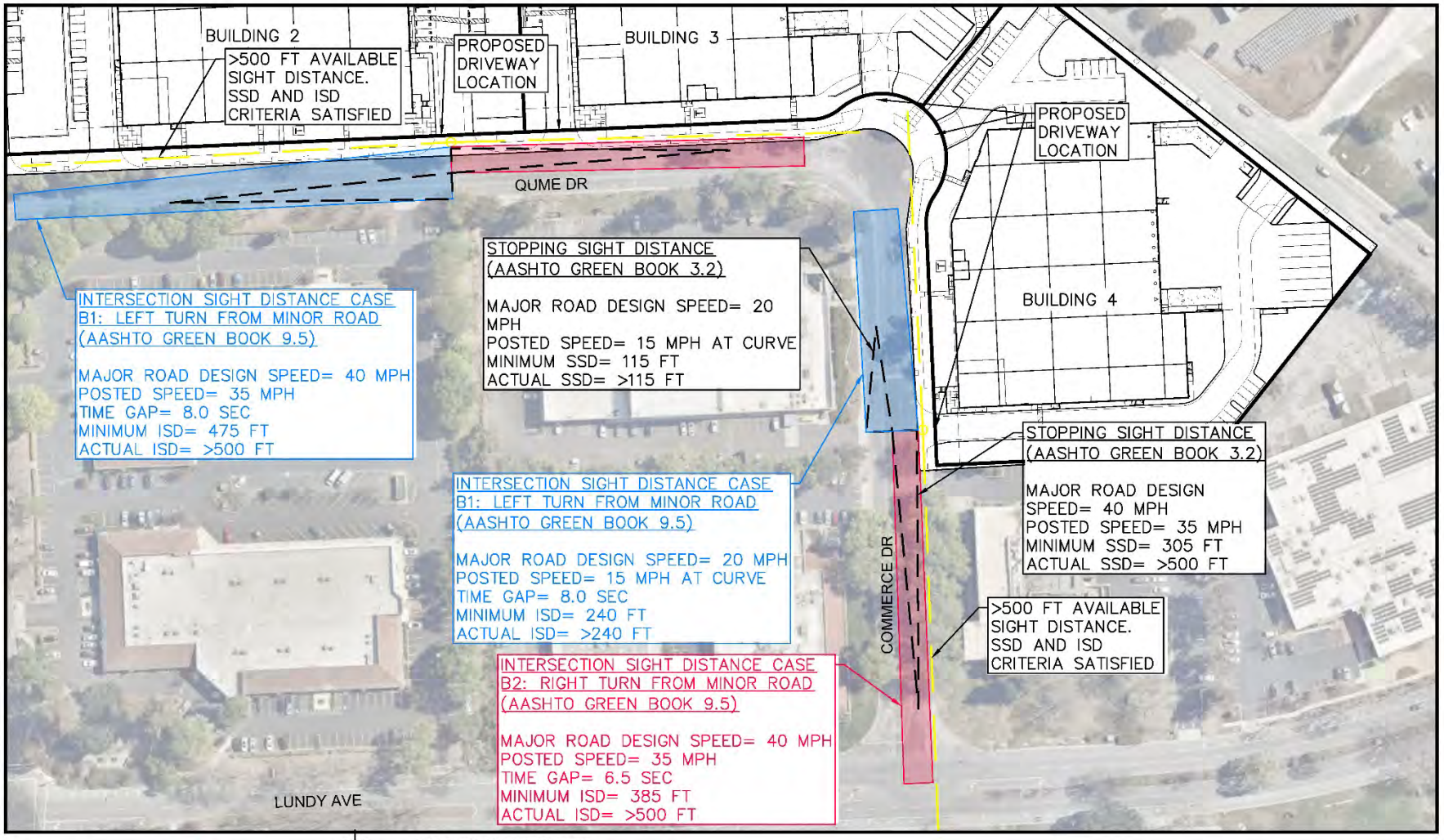
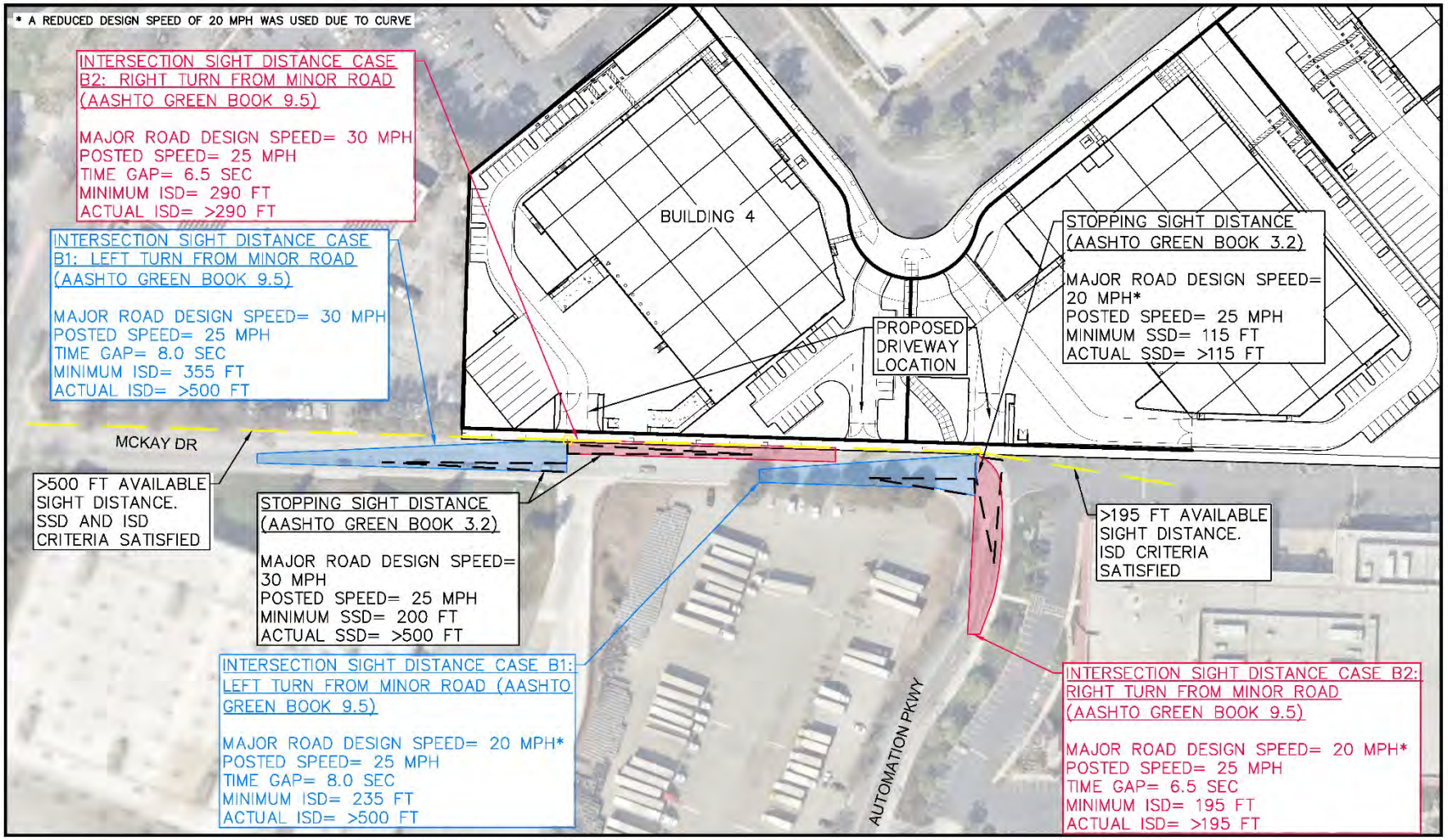


Figure 27: Sight Distance Analysis (McKay Drive and Automation Parkway)



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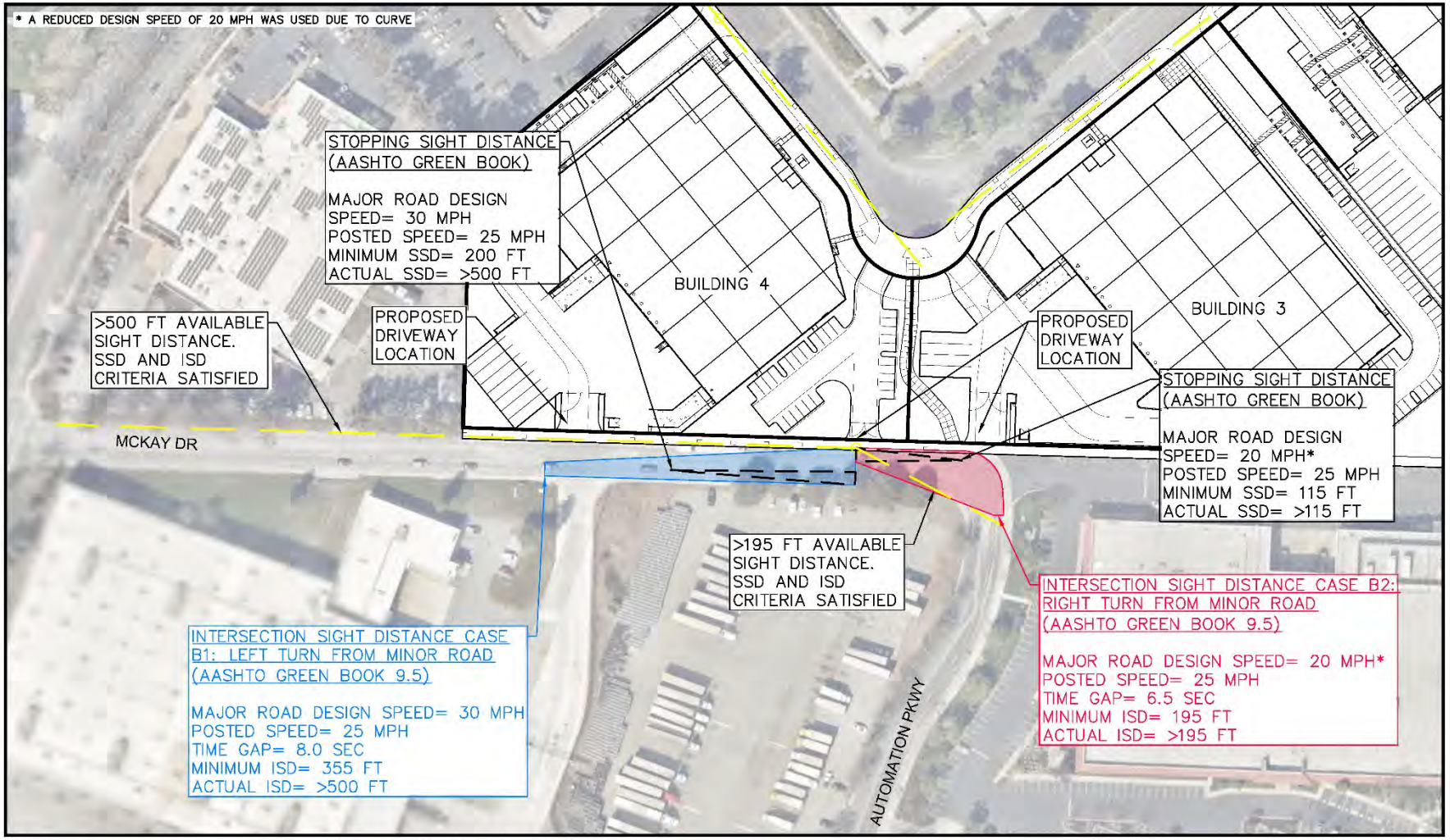
MCKAY DR AND AUTOMATION PKWY
SIGHT DISTANCE ANALYSIS

QUME-COMMERCE DRIVE TRANSPORTATION ANALYSIS

Figure 28: Sight Distance Analysis (McKay Drive and Automation Parkway)



6.5 Bicycle, Pedestrian, and Transit Access

The project will provide on-site pedestrian and bicycle improvements to the existing facilities along the project frontages on Qume Drive, Commerce Drive, and McKay Drive. The following improvements will enhance bicycle and pedestrian access in the area.

- Construct an internal bicycle / pedestrian pathway connecting the cul-de-sacs at McKay Drive / Automation Parkway and Commerce Drive / Qume Drive.
- Shift existing curblines along the Commerce Drive and Qume Drive frontages 10-feet inwards to achieve a future 40-feet curb-to-curb width along both streets.

These multi-modal improvements will provide 10-foot wide sidewalk facilities with landscape buffer along the project frontages on Qume, Commerce, and McKay Drive.

As stated in Section 2, the existing network of sidewalks and crosswalks in the study area are adequate with connectivity and walkable routes to nearby bus stops, retail, and other points of interest in the immediate project area. In addition, the nearest transit stops to the project site are located at the intersections of Lundy Ave / Commerce Dr and Lundy Ave / Concourse Dr which are less than quarter a mile away. As for bicycle connectivity, Lundy Avenue provides Class II bike lanes in the northbound and southbound direction which is in the vicinity of the project site.

Due to the function and operational characteristics of the proposed warehouse and industrial park use, the project is not anticipated to add substantial project trips to the existing pedestrian, bicycle, or transit facilities in the area. Therefore, the project would not create an adverse effect to the existing pedestrian, bicycle, or transit facility operations.

6.6 Vehicle and Bicycle Parking

Per the Chapter 20.90.060, Table 20-190, and Table 20-210 of the San Jose Municipal Code, the proposed Qume & Commerce project land uses are required to provide the following minimum off-street parking:

- Offices, research and development (10,000 square feet total gross floor area)
  - One (1) vehicle parking space per 300 -square feet of total gross floor area
  - One (1) bicycle parking space per 4,000-square feet of total gross floor area
- Mezzanine (10,000 square feet total gross floor area)
  - No parking standards for this use
- Warehouse (694,491 square feet total gross floor area)
  - Two (2) vehicle parking spaces minimum for warehouses under 5,000-square feet of total gross floor area
  - Five (5) vehicle parking spaces minimum for warehouses between 5,000 and 25,000-square feet of total gross floor area
  - One (1) vehicle parking space per 5,000-square feet of total gross floor area for warehouses greater than 25,000-square feet
  - One (1) bicycle parking space per 10 full-time employees
  - One (1) shower for warehouses between 85,000 and 425,000-square feet
  - One (1) motorcycle parking space for every 10 code-required auto parking spaces

Based on these City ratios, the project is required to provide a minimum total of 180 off-street vehicle parking spaces and 19 bicycle parking spaces for the proposed industrial warehouse use.

The project site plan proposes a total parking supply of 413 vehicle spaces to accommodate tenant employees and a total bicycle parking supply of 22 spaces (11 short term racks and 11 long term locker spaces).

The project site plan is anticipated to provide sufficient vehicle and bicycle parking per the City's off-street parking requirement. **Table 12** summarize the vehicle and bicycle parking requirements for the Qume & Commerce project.

Table 12: Project Parking Summary

PARKING TYPE	LAND USE	PARKING STANDARD PER SAN JOSE MUNICIPAL CODE	PROJECT COMPONENT	PROJECT SIZE PER UNIT	VEHICLE PARKING (# SPACES)	BICYCLE PARKING (# SPACES)
Vehicle	Warehouse	2 vehicle spaces for under 5,000 SQFT 5 vehicle spaces for under 25,000 SQFT 1 vehicle space per 5,000 SQFT for over 25,000 SQFT	Building 1	353,180	72	-
			Building 2	197,735	41	-
			Building 3	78,751	17	-
			Building 4	64,825	14	-
	Office (Research & Development)	1 vehicle space per 300 SQFT	Building 1	2,500	9	-
			Building 2	2,500	9	-
			Building 3	2,500	9	-
			Building 4	2,500	9	-
Bicycle	Warehouse	1 bicycle space per 10 full time employees	Building 1	80	-	8
			Building 2	50	-	5
			Building 3	30	-	3
			Building 4	30	-	3
	Office (Research & Development)	1 bicycle space per 4,000 SQFT	Building 1	2,500	-	0
			Building 2	2,500	-	0
			Building 3	2,500	-	0
			Building 4	2,500	-	0
TOTAL REQUIRED PARKING SPACES					**180**	**19**
PROPOSED PARKING SPACES PROVIDED ON-SITE					**413**	**22**
SUFFICIENT ON-SITE PARKING?					**YES**	**YES**

NOTES:

SQFT = Square Feet; GFA = Gross Floor Area;

Proposed parking supply based on project description from applicant

Parking requirements based on San Jose Municipal Code 20.90.060

6.7 Construction Operations

During project construction, the existing curb, gutter, and sidewalk along the project frontage would be widened and replaced. A Traffic Management Plan (TMP) should be developed for construction activities at the site. Prior to construction, the contractor should place temporary signs indicating closed sidewalk facilities, install a temporary screened fence around the work area, protect existing features/utilities, and repair any damaged improvements within public right of way per City of San Jose requirements.

Pedestrians and bicyclists would potentially not be able to travel on the east side of Qume Drive or the south side of Commerce Drive next to the project during construction and would need to use the existing facilities on the opposite side of the street.

Vehicle access along Qume Drive and Commerce Drive near the project may also be restricted during construction due to its 2-lane roadway cross-section. The through lanes on Qume Drive and Commerce Drive could be temporary closed, and the contractor should install appropriate MUTCD traffic control devices to warn approaching vehicles of temporary lane closures and lane merges prior to the project site.

It is assumed that a temporary construction vehicle parking and stage construction area would be provided on the project site. This potential parking area would require the contractor to obtain necessary approval, right of entry, and permits with the City and property owners prior to construction.

6.8 Neighborhood Interface

The proposed project is in the existing industrial district in the City and not located in the vicinity of schools or residential neighborhoods; therefore, the project is not anticipated to create an adverse effect to the existing school and neighborhood operations in the surrounding area. The project is located on commercial / industrial collector streets and would not promote excessive cut through traffic or vehicle speeding due to the closed roadway network along Qume and Commerce Drive.

On-street parking in the surrounding roadway network is prohibited on Qume Drive and Commerce Drive. From the parking analysis, the project's on-site parking would satisfy the City's vehicle parking standard, and the project is not anticipated to create an adverse effect to the existing parking condition in the surrounding area.

From recent site visits and field observations, sidewalk and curb returns are provided in the area. The existing sidewalks in the area are at least four-feet wide and have either rolled or raised concrete curbs. ADA compliant curb ramps are also provided in the area. The project is not anticipated to create an adverse effect to the existing pedestrian and bicycle facilities in the surrounding neighborhood area.

7 CONCLUSIONS AND RECOMMENDATIONS

Project Vehicle Miles Traveled (VMT) Impacts and Mitigation Measures

The project consists of industrial land use and does not meet the screening criteria for VMT analysis exemption as a small infill project of 30,000 square-feet of total gross floor area or less per City guidelines. The proposed project was evaluated in the VMT tool assuming development of 714,491 square-feet of industrial use.

The City's VMT per employee threshold for industrial land uses is 14.37. For the surrounding land use area, the existing VMT is 14.86. The proposed project is anticipated to generate a VMT per employee of 14.82 (excluding any VMT reduction strategies). The evaluation tool estimates that the project would exceed the City's industrial VMT per employee threshold and would trigger a VMT impact.

Since the project VMT exceeds the industrial thresholds of significance, the project will need to mitigate its CEQA transportation impact by implementing a variety of City approved VMT reduction strategies. Per City direction, the applicant would implement Tier 2 multi-modal infrastructure improvements, and with these measures, the project could achieve a VMT per employee of 13.65 which is below the City threshold. Final implementation of the proposed VMT reduction strategies would need to be coordinated between the project applicant and the City.

The project would exceed the City's industrial VMT per employee threshold and would need to implement the following VMT reduction strategies to mitigate the impact and improve multi-modal access per City request:

- The project would need to construct an internal bicycle / pedestrian pathway connecting the cul-de-sacs at McKay Drive / Automation Parkway and Commerce Drive / Qume Drive.
- The project would need to shift the existing curb lines along the Commerce Drive and Qume Drive frontages 10-feet inwards to achieve a future 40-feet curb-to-curb width along both streets.

Project Trip Generation

Trip generation for the proposed project land uses was calculated using average trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* (September 2021).

Per the 2020 *Transportation Analysis Handbook*, trip generation reduction credits were applied to the project including location-based mode-share, potential VMT reduction strategies, and existing land uses. Development of the proposed project with all applicable trip reductions and credits is anticipated to generate a net new total of 0 additional daily trips, 0 AM, and 0 PM peak hour trips to the roadway network. Total gross vehicle trips for the proposed project (excluding existing trip credit adjustments) are 2,035 daily trips, 204 AM peak hour trips, and 204 PM peak hour vehicle trips.

Intersection Traffic Operations

Due to COVID-19 situation, traffic counts for Year 2021 were determined from historic count data. Weekday AM and PM peak hour intersection turning movement volumes for the existing study intersections were obtained from City of San Jose traffic data and augmented with a 1% compound growth rate to Year 2021. These historic counts included vehicles, bicycles, and pedestrians and were

collected when local schools were in session and the weather was fair. Traffic volumes at the unsignalized study intersections were supplemented with new turning movement counts on Thursday, September 23, 2021.

The study intersections were assessed under Existing, Background and Project scenarios. City of San José and Valley Transportation Authority Congestion Management Program intersection level of service standards and significance thresholds were used to determine adverse effects caused by the project.

A signal warrant analysis was prepared for the Lundy Avenue and Commerce Drive intersection per the California Manual on Uniform Traffic Control Devices (MUTCD).

Adverse Effects and Improvements

The project is not anticipated to generate an adverse effect to the study intersections during the Project scenario.

Per City request, the project is determining the feasibility of modifying the existing curb line along the Qume Drive and Commerce Drive frontages. Along the project frontages, the curb line would be extended 10-feet inward towards the roadway centerline to achieve a 40-feet curb to curb roadway width along Qume and Commerce Drive. The project applicant is currently evaluating this improvement.

Although the project is not located within the North San Jose Area Development Policy boundary, the project may be required to pay a traffic impact fee based on the distribution of vehicle trips accessing the identified infrastructure improvements within the Policy area. The project is anticipated to add gross PM vehicle trips to the Oakland/Mabury and Lundy/Murphy study intersections; however, accounting for existing trip credits, the project is anticipated to add 0 total net new PM vehicle trips for traffic impact fees. Therefore, the project is not anticipated to contribute a traffic fee towards the NSJADP.

Vehicle Site Access and Circulation

The site will be accessed from six (6) driveways along Qume Drive, two (2) driveways along Commerce Drive, and three (3) driveways along McKay Drive. Project driveways are designed for truck access along Qume Drive and Commerce Drive and are 32-feet wide. Based on associated turning templates for the given design vehicle, the wider driveway dimensions proposed on the latest site plan are recommended to provide sufficient vehicle access and circulation for entering and exiting vehicles.

The City recommends project driveways which provide passenger vehicle access only to be designed with the City standard width cut of 26-feet.

The proposed driveway locations optimize sight distance and spacing for the proposed site plan. Passenger vehicles, delivery trucks, refuse, and emergency vehicles are able to circulate within the project site without conflict.

Pedestrian, Bicycle, and Transit Site Access

The project will provide on-site pedestrian and bicycle improvements to the existing facilities along the project frontages on Qume Drive, Commerce Drive, and McKay Drive which will enhance bicycle and pedestrian access in the area. These frontage improvements include constructing new 10-feet wide sidewalks by shifting the curb lines and providing a Class I pathway connecting the cul-de-sacs at McKay Drive / Automation Parkway and Commerce Drive / Qume Drive. Due to the function and operational

characteristics of the proposed use, the Qume & Commerce project is not anticipated to add substantial project trips to the existing pedestrian, bicycle, or transit facilities in the area. Therefore, the project would not create an adverse effect to the existing pedestrian, bicycle, or transit facility operations.

On-Site Vehicle and Bicycle Parking

Per the City's parking standard, the project site is anticipated to provide sufficient on-site vehicle and bicycle parking to meet the City's minimum parking requirement.

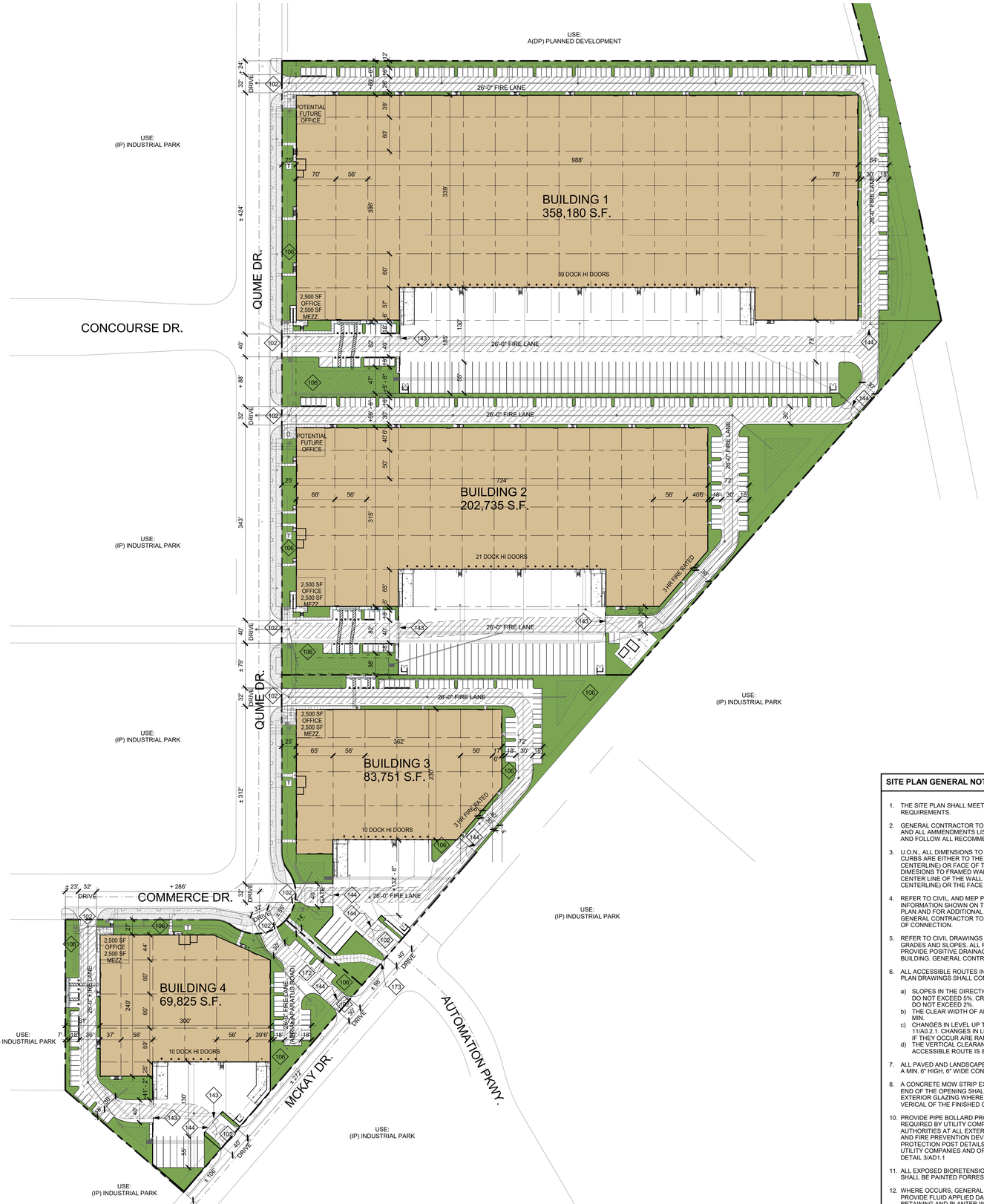
Neighborhood Interface

The project's on-site parking would satisfy the City's vehicle parking standard, and the project is not anticipated to create an adverse effect to the existing parking condition in the surrounding area. The project is not anticipated to create an adverse effect to the existing pedestrian and bicycle facilities in the surrounding area.

8 APPENDICES

Appendices A – Qume-Commerce Project Site Plan
Appendices B – San Jose VMT Evaluation Tool Summary Report
Appendices C – Intersection, Roadway, and Freeway Traffic Counts
Appendices D – San Jose Approved Trip Inventory
Appendices E – TRAFFIX Intersection Operations Analysis
Appendices F – MUTCD Signal Warrant Criteria
Appendices G – MUTCD Signal Warrant Worksheet
Appendices H – Warehouse Development Site Research

Appendices A – Qume-Commerce Project Site Plan



1 PROPOSED OVERALL SITE PLAN
1" = 80'-0"

DEVELOPER/OWNER

BRIDGE DEVELOPMENT PARTNERS, LLC.
1600 E. FRANKLIN AVE SUITE D
EL SEGUNDO, CA 90245
CONTACT: HEATHER CROSSNER
PHONE: (213) 425-2309
EMAIL:HCROSSNER@BRIDGEINDUSTRIAL.COM

APPLICANT'S REPRESENTATIVE/ARCHITECT

HERDMAN ARCHITECTURE & DESIGN, INC.
16201 SCIENTIFIC WAY
IRVINE, CA 92618
CONTACT: BRIDGET HERDMAN
PHONE: 714.389.2800
EMAIL: BRIDGET@HERDMAN-AD.COM

LEGAL DESCRIPTION & ZONING

LEGAL DESCRIPTION: SEE CIVIL PLANS FOR ADDITIONAL INFORMATION

ASSESSOR'S PARCEL NO: 244-15-003; 244-15-020; 244-15-028; 244-15-026

SPECIFIC PLAN LEGEND: INDUSTRIAL PARK BASE DISTRICT
ZONING: INDUSTRIAL PARK (IP)

KEYNOTES

102	PROPOSED DRIVEWAY, PER JURISDICTIONAL STANDARDS.
106	PROPOSED LANDSCAPED AREA. SEE LANDSCAPING PLANS FOR ADDITIONAL INFORMATION.
143	PAINTED STEEL ROLLING GATE(S). PROVIDE CONDUIT TO GATE FOR FUTURE MOTOR & OFFICE AREA FOR FUTURE INTERCOM CONTROL. PROVIDE KNOX BOX AS REQUIRED BY FIRE AUTHORITY.
144	PAINTED STEEL SWINGING GATE(S). PROVIDE CONDUIT TO GATE FOR FUTURE MOTOR & OFFICE AREA FOR FUTURE INTERCOM CONTROL. PROVIDE KNOX BOX AS REQUIRED BY FIRE AUTHORITY.
172	CLASS 1 BIKE LANE CONNECTION. SEE CIVIL AND LANDSCAPE DRAWINGS FOR ADDTIONAL INFORMATION.
173	CLASS 2 TRANSITION REQUIRED. SEE CIVIL DRAWINGS FOR ADDTIONAL INFORMATION.

PROJECT INFORMATION

PROJECT INFORMATION	ENTITLEMENT	12.02.2021
GROSS SITE AREA	32.13 AC	1,399,583 SF
NET SITE AREA		1,399,583 SF
NET FAR		51.1%
MAX FAR		N/A
ZONE:		IP (INDUSTRIAL PARK)
CONSTRUCTION TYPE:		III-B
SETBACKS(BLDG):		BUILDING PARKING
STREET FRONT BLDG. SETBACK (QUME AVE		25' 25'
INT/REAR SETBACK		0' 0'
PROPOSED TOTAL BUILDING AREA		714,491 SF
TOTAL PARKING REQUIRED		140
TOTAL PARKING PROVIDED		413
LANDSCAPE	REQUIRED	7.5% 78,293 SF
	PROVIDED	21.4% 223,406 SF

BUILDING 1	
BUILDING AREA	358,180 SF
FOOTPRINT	355,680 SF
WAREHOUSE	353,180
OFFICE	2,500
MEZZANINE	
OFFICE	2,500
PARKING REQUIRED (5' x 18')	71
WAREHOUSE @ 1/5,000	71
MOTORCYCLE SPACE REQ (3' x 6')	
WAREHOUSE @ 1/10 PARKING SPACES	8
BICYCLE SPACE REQ.	11
WAREHOUSE @ 1/10 EMPLOYEES	8
OFFICE @ 1/4,000 SF (MIN. 3 SPACES)	3
NO TRUCK REQ.	0
PARKING PROVIDED (9' x 18')	157
STANDARD	133
VAN ADA	1
STND ADA	5
EV VAN ADA	1
EV ADA	1
EV	8
CLEAN AIR	8
MOTORCYCLE PARKING PROVIDED	8
BICYCLE PARKING PROVIDED	12
TRAILER SPACES PROVIDED	61
LOADING REQUIRED	19
LOADING PROVIDED	39

BUILDING 2	
BUILDING AREA	202,735 SF
FOOTPRINT	200,235 SF
WAREHOUSE	197,735
OFFICE	2,500
MEZZANINE	
OFFICE	2,500
PARKING REQUIRED (9' x 18')	40
WAREHOUSE @ 1/5,000	40
MOTORCYCLE SPACE REQ (3' x 6')	
WAREHOUSE @ 1/10 PARKING SPACES	4
BICYCLE SPACE REQ.	8
WAREHOUSE @ 1/10 EMPLOYEES	4
OFFICE @ 1/4,000 SF (MIN. 3 SPACES)	3
NO TRUCK REQ.	0
PARKING PROVIDED (9' x 18')	150
STANDARD	126
VAN ADA	1
STND ADA	5
EV VAN ADA	1
EV ADA	1
EV	8
CLEAN AIR	8
MOTORCYCLE PARKING PROVIDED	5
BICYCLE PARKING PROVIDED	6
TRAILER SPACES PROVIDED	27
LOADING REQUIRED	11
LOADING PROVIDED	25

BUILDING 3	
TOTAL BUILDING AREA	83,751 SF
FOOTPRINT	81,251 SF
WAREHOUSE	78,751
OFFICE	2,500
MEZZANINE	
OFFICE	2,500
TOTAL PARKING REQUIRED (9' x 18')	16
WAREHOUSE @ 1/5,000	16
MOTORCYCLE SPACE REQ (3' x 6')	
WAREHOUSE @ 1/10 PARKING SPACES	2
BICYCLE SPACE REQ.	6
WAREHOUSE @ 1/10 EMPLOYEES	3
OFFICE @ 1/4,000 SF (MIN. 3 SPACES)	3
NO TRUCK REQ.	0
PARKING PROVIDED (9' x 18')	53
STANDARD	43
VAN ADA	1
STND ADA	2
EV VAN ADA	1
EV ADA	0
EV	3
CLEAN AIR	3
MOTORCYCLE PARKING PROVIDED	5
BICYCLE PARKING PROVIDED	6
TRAILER SPACES PROVIDED	4
LOADING REQUIRED	5
LOADING PROVIDED	10

BUILDING 4	
TOTAL BUILDING AREA	69,825 SF
FOOTPRINT	67,325 SF
WAREHOUSE	64,825
OFFICE	2,500
MEZZANINE	
OFFICE	2,500
TOTAL PARKING REQUIRED (9' x 18')	13
WAREHOUSE @ 1/5,000	13
OFFICE @ 1/300	
MOTORCYCLE SPACE REQ (3' x 6')	
WAREHOUSE @ 1/10 PARKING SPACES	2
BICYCLE SPACE REQ.	6
WAREHOUSE @ 1/10 EMPLOYEES	3
OFFICE @ 1/4,000 SF (MIN. 3 SPACES)	3
NO TRUCK REQ.	0
PARKING PROVIDED (9' x 18')	53
STANDARD	43
VAN ADA	1
STND ADA	2
EV VAN ADA	1
EV ADA	0
EV	3
CLEAN AIR	3
MOTORCYCLE PARKING PROVIDED	3
BICYCLE PARKING PROVIDED	6
TRAILER SPACES PROVIDED	7
LOADING REQUIRED	5
LOADING PROVIDED	7

SITE LEGEND

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- CLEAN AIR/ VANPOOL/ EV
- PER CALGREEN 5.106.5.2.1
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- FIRE HYDRANT
- STREET LIGHT
- PATH OF TRAVEL
- PROPERTY LINE
- DOCK HIGH DOOR
- DRIVE THRU. DOOR

SITE PLAN GENERAL NOTES

1. THE SITE PLAN SHALL MEET ALL ENGINEERING & NPDES REQUIREMENTS.
2. GENERAL CONTRACTOR TO REVIEW THE SOILS REPORT AND ALL AMMENDMENTS LISTED ON THE TITLE SHEET AND FOLLOW ALL RECOMMENDATIONS.
3. U.O.N., ALL DIMENSIONS TO CONCRETE WALLS AND CURBS ARE EITHER TO THE CENTER (SHOWN WITH A CENTERLINE) OR FACE OF THE WALL OR CURB. ALL DIMESIONS TO FRAMED WALLS ARE EITHER TO THE CENTER LINE OF THE WALL FRAMING (SHOWN WITH A CENTERLINE) OR THE FACE OF THE WALL FINISH.
4. REFER TO CIVIL AND M/P PLANS TO CONFIRM UTILITY INFORMATION SHOWN ON THE ARCHITECT'S SITE PLAN AND FOR ADDITIONAL UTILITY INFORMATION. GENERAL CONTRACTOR TO COORDINATE ALL POINTS OF CONNECTION.
5. REFER TO CIVIL DRAWINGS FOR ALL FINISHED GRADES AND SLOPES. ALL FINISHED GRADES TO PROVIDE POSITIVE DRAINAGE AWAY FORM THE BUILDING. GENERAL CONTRACTOR TO FIELD VERIFY.
6. ALL ACCESSIBLE ROUTES INDENTIFIED ON THE SITE PLAN DRAWINGS SHALL CONFORM TO THE FOLLOWING:
   a) SLOPES IN THE DIRECTION OF TRAVEL DO NOT EXCEED 5%. CROSS SLOPES DO NOT EXCEED 2%.
   b) THE CLEAR WIDTH OF ALL WALKWAYS IS 4'-0" MIN.
   c) CHANGES IN LEVEL UP TO 1/2" COMPLY w/ 11A/0.2.1. CHANGES IN LEVEL GREATER THAN 1/2" IF THEY OCCUR ARE RAMPED. SEE PLANS
   d) THE VERTICAL CLEARANCE ALONG THE ACCESSIBLE ROUTE IS 80" MIN.
7. ALL PAVED AND LANDSCAPED AREAS TO BE BOUND BY A MIN. 6" HIGH, 6" WIDE CONCRETE CURB U.O.N.
8. A CONCRETE MOW STRIP EXTENDING 12" BEYOND EA END OF THE OPENING SHALL BE PROVIDED @ ALL EXTERIOR GLAZING WHERE THE SILL IS WITHIN 3' VERICAL OF THE FINISHED GRADE. SEE 2/AD1.1
10. PROVIDE PIPE BOLLARD PROTECTION POSTS AS REQUIRED BY UTILITY COMPANIES AND OR FIRE AUTHORITIES AT ALL EXTERIOR ELECTRICAL EQUIPMENT AND FIRE PREVENTION DEVICES. IF PIPE BOLLARD PROTECTION POST DETAILS ARE NOT PROVIDED BY UTILITY COMPANIES AND OR FIRE AUTHORITY SEE DETAIL 3/AD1.1
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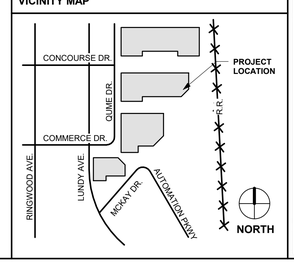
12. WHERE OCCURS, GENERAL CONTRACTOR TO PROVIDE FLUID APPLIED DAMP PROOFING AT ALL RETAINING AND PLANTER WALLS WHERE THE SIDE OF THE WALL OPPOSITE THE SOIL SIDE IS EXPOSED TO VIEW AND ALL EXTERIOR WALLS WHERE THE ADJACENT FLOOR SLAB IS BELOW GRADE. SEE 19/AD1.1

VICINITY MAP



QUME AND COMMERCE DRIVE
SAN JOSE, CA

PROJECT
ENTITLEMENT -SECOND PLANNING SUBMITTAL

HERDMAN
ARCHITECTURE + DESIGN

A21-2032
12.09.2021

NORTH

OVERALL SITE PLAN

A1

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1 ENLARGED SITE PLAN - NORTH
1" = 40'-0"

KEYNOTES

102	PROPOSED DRIVEWAY, PER JURISDICTIONAL STANDARDS.
106	PROPOSED LANDSCAPED AREA. SEE LANDSCAPING PLANS FOR ADDITIONAL INFORMATION.
114	ACCESSIBLE SITE ENTRANCE SIGN.
137	8'-0" HIGH TUBE STEEL FENCE.
139	RETAINING WALL.
143	PAINTED STEEL ROLLING GATE(S). PROVIDE CONDUIT TO GATE FOR FUTURE MOTOR & OFFICE AREA FOR FUTURE INTERCOM CONTROL. PROVIDE KNOX BOX AS REQUIRED BY FIRE AUTHORITY.
144	PAINTED STEEL SWINGING GATE(S). PROVIDE CONDUIT TO GATE FOR FUTURE MOTOR & OFFICE AREA FOR FUTURE INTERCOM CONTROL. PROVIDE KNOX BOX AS REQUIRED BY FIRE AUTHORITY.
146	2 POSITION BIKE RACK.
149	CONCRETE TRUCK RAMP w/ 42" HIGH CONCRETE TILT-UP GUARD ON OPEN SIDE(S). PAINT ALL SIDES OF GUARD WALLS AND HANDRAILS.SEE ARCHITECTURAL DRAWINGS FOR COLOR SCHEDULE.
169	2'-0" PARKING OVERHANG AT DASHED LINE.
170	PROPOSED BIO-RETENSION TREATMENT AREA. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
171	EXISTING 1-STORY BUILDINGS UTILITY STRUCTURE TO REMAIN. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
174	AERIAL APPARATUS ROAD PER CITY OF SAN JOSE FIRE DEPARTMENT REQUIREMENTS

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HERDMAN
ARCHITECTURE + DESIGN
A21-2032
12.09.2021
NORTH

ENLARGED SITE PLAN - NORTH

A1_1

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A21-2032
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NORTH

ENLARGED SITE PLAN - SOUTH

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Appendices B – San Jose VMT Evaluation Tool Summary Report

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

PROJECT:

Name: Qume And Commerce Drive
Location: Qume Drive & Commerce Drive
Parcel: 24415026 Parcel Type: Suburb with Multifamily Housing
Proposed Parking Spaces Vehicles: 413 Bicycles: 22

Tool Version: 2/29/2019
Date: 12/9/2021

LAND USE:

Residential:	
Single Family	0 DU
Multi Family	0 DU
Subtotal	0 DU
Office:	0 KSF
Retail:	0 KSF
Industrial:	714.5 KSF

Percent of All Residential Units

Extremely Low Income (≤ 30% MFI)	0 % Affordable
Very Low Income (> 30% MFI, ≤ 50% MFI)	0 % Affordable
Low Income (> 50% MFI, ≤ 80% MFI)	0 % Affordable

VMT REDUCTION STRATEGIES

Tier 1 - Project Characteristics

Increase Residential Density
- Existing Density (DU/Residential Acres in half-mile buffer) 9
- With Project Density (DU/Residential Acres in half-mile buffer) 9

Increase Development Diversity
- Existing Activity Mix Index 0.84
- With Project Activity Mix Index 0.82

Integrate Affordable and Below Market Rate
- Extremely Low Income BMR units . . . . . 0 %
- Very Low Income BMR units . . . . . 0 %
- Low Income BMR units . . . . . 0 %

Increase Employment Density
- Existing Density (Jobs/Commercial Acres in half-mile buffer) 38
- With Project Density (Jobs/Commercial Acres in half-mile buffer) 42

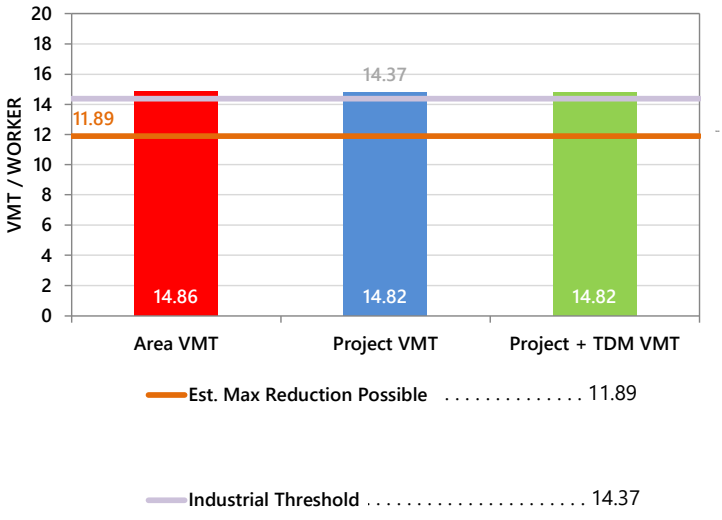
Tier 2 - Multimodal Infrastructure

Tier 3 - Parking

Tier 4 - TDM Programs

EMPLOYMENT ONLY

The tool estimates that the project would generate per non-industrial worker VMT and per industrial worker VMT above the City's threshold.



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Tool Version: 2/29/2019
Date: 12/13/2021

LAND USE:

Residential:

Single Family	0 DU
Multi Family	0 DU
Subtotal	0 DU

Office: 0 KSF
Retail: 0 KSF
Industrial: 714.5 KSF

Percent of All Residential Units

Extremely Low Income (≤ 30% MFI)	0 % Affordable
Very Low Income (> 30% MFI, ≤ 50% MFI)	0 % Affordable
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- Existing Density (Jobs/Commercial Acres in half-mile buffer) 38
- With Project Density (Jobs/Commercial Acres in half-mile buffer) 42

Tier 2 - Multimodal Infrastructure

Increase Network Connectivity *(In Coordination with SJ)*
- Intersection Density . . . . . 2 int/sqmi
- Intersection Density with Project . . . . . 3 int/sqmi

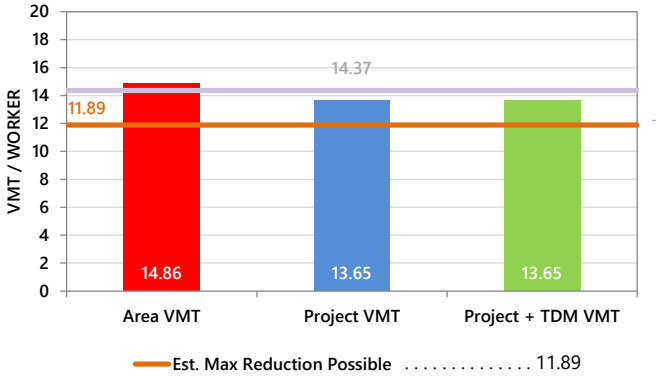
Traffic Calming Measures *(In Coordination with SJ)*
- Are improvements provided beyond the development frontage? . . . . . Yes

Tier 3 - Parking

Tier 4 - TDM Programs

EMPLOYMENT ONLY

The tool estimates that the project would generate per non-industrial worker VMT below the City's threshold. There are selected strategies that require coordination with the City of San Jose to implement.



Appendices C – Intersection, Roadway, and Freeway Traffic Counts

Prepared by National Data & Surveying Services

Lundy Ave & Commerce Dr

Peak Hour Turning Movement Count

ID: 21-080229-001
City: San Jose

Day: Thursday
Date: 9/23/2021

PEAK HOURS		COUNT PERIODS
AM	07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Lundy Ave)

AM	19	295	13	4	329	AM
NOON	0	0	0	0	0	NOON
PM	15	694	3	6	386	PM
	0	2	1	0		

EASTBOUND (Commerce Dr)

AM	NOON	PM	
62	0	28	
0	0	0	0
8	0	9	0
0	0	1	1
15	0	41	0
AM	NOON	PM	

WESTBOUND (Commerce Dr)

	PM	NOON	AM
0	11	0	1
1	2	0	0
0	59	0	8
0	0	0	0
	20	0	97
	PM	NOON	AM

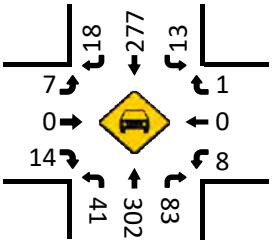
CONTROL: 1-Way Stop(WB)

TEV	835 AM	0 NOON	1254 PM
PHF	0.90		0.91

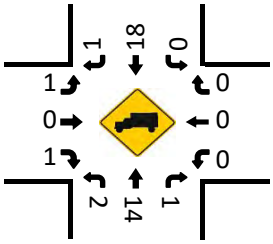
NORTHBOUND (Lundy Ave)

PM	820	26	11	360	16	PM
NOON	0	0	0	0	0	NOON
AM	347	29	43	316	84	AM
		0	1	3	0	

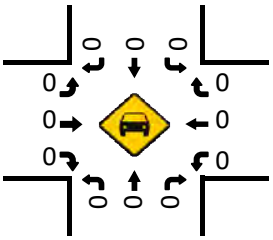
Cars (AM)



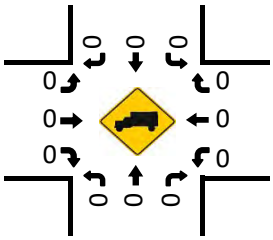
HT (AM)



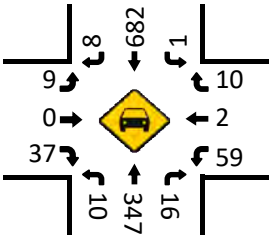
Cars (NOON)



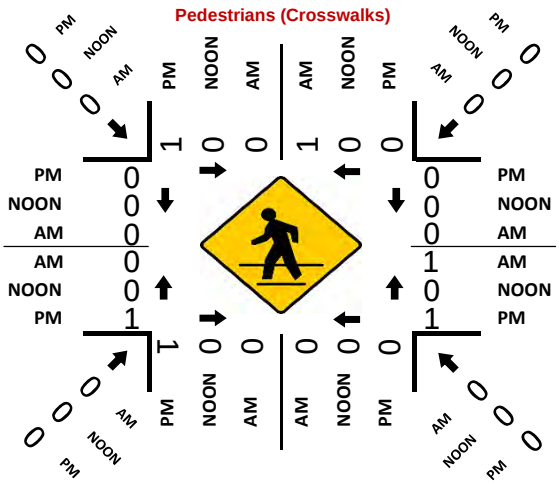
HT (NOON)



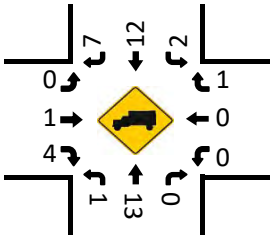
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

VOLUME

Lundy Ave N/O Commerce Dr

Day: Thursday
Date: 9/23/2021

City: San Jose
Project #: CA21_080228_001

DAILY TOTALS	NB	SB	EB	WB	Total
	5,459	6,605	0	0	12,064

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	7		15						22		12:00	105		117						222	
00:15	9		8						17		12:15	104		122						226	
00:30	9		3						12		12:30	108		105						213	
00:45	10	35	8	34					18	69	12:45	93	410	107	451					200	861
01:00	8		10						18		13:00	108		130						238	
01:15	8		6						14		13:15	81		104						185	
01:30	7		11						18		13:30	93		110						203	
01:45	4	27	7	34					11	61	13:45	89	371	104	448					193	819
02:00	11		4						15		14:00	98		111						209	
02:15	12		10						22		14:15	94		117						211	
02:30	6		5						11		14:30	74		130						204	
02:45	5	34	4	23					9	57	14:45	96	362	165	523					261	885
03:00	9		11						20		15:00	82		143						225	
03:15	2		5						7		15:15	104		152						256	
03:30	10		10						20		15:30	96		180						276	
03:45	8	29	4	30					12	59	15:45	96	378	158	633					254	1011
04:00	8		10						18		16:00	71		158						229	
04:15	8		6						14		16:15	89		128						217	
04:30	12		8						20		16:30	93		198						291	
04:45	19	47	10	34					29	81	16:45	95	348	162	646					257	994
05:00	14		12						26		17:00	126		189						315	
05:15	26		15						41		17:15	110		172						282	
05:30	39		18						57		17:30	89		154						243	
05:45	60	139	25	70					85	209	17:45	92	417	165	680					257	1097
06:00	26		23						49		18:00	108		163						271	
06:15	57		13						70		18:15	90		150						240	
06:30	72		26						98		18:30	102		130						232	
06:45	60	215	42	104					102	319	18:45	94	394	110	553					204	947
07:00	55		29						84		19:00	91		94						185	
07:15	46		35						81		19:15	69		77						146	
07:30	79		51						130		19:30	85		96						181	
07:45	105	285	83	198					188	483	19:45	88	333	66	333					154	666
08:00	85		78						163		20:00	60		69						129	
08:15	88		78						166		20:15	68		54						122	
08:30	68		83						151		20:30	53		37						90	
08:45	84	325	75	314					159	639	20:45	36	217	46	206					82	423
09:00	68		77						145		21:00	29		38						67	
09:15	69		81						150		21:15	21		21						42	
09:30	62		85						147		21:30	18		35						53	
09:45	82	281	90	333					172	614	21:45	18	86	26	120					44	206
10:00	71		66						137		22:00	25		25						50	
10:15	73		103						176		22:15	16		12						28	
10:30	59		78						137		22:30	19		18						37	
10:45	66	269	91	338					157	607	22:45	19	79	16	71					35	150
11:00	66		81						147		23:00	24		17						41	
11:15	83		108						191		23:15	9		10						19	
11:30	88		89						177		23:30	7		14						21	
11:45	97	334	105	383					202	717	23:45	4	44	5	46					9	90
TOTALS		2020		1895						3915	TOTALS		3439		4710						8149
SPLIT %		51.6%		48.4%						32.5%	SPLIT %		42.2%		57.8%						67.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	5,459	6,605	0	0	12,064

AM Peak Hour	11:45	11:45			11:45	PM Peak Hour	16:30	16:30			16:30
AM Pk Volume	414	449			863	PM Pk Volume	424	721			1145
Pk Hr Factor	0.958	0.920			0.955	Pk Hr Factor	0.841	0.910			0.909
7 - 9 Volume	610	512	0	0	1122	4 - 6 Volume	765	1326	0	0	2091
7 - 9 Peak Hour	07:30	07:45			07:45	4 - 6 Peak Hour	16:30	16:30			16:30
7 - 9 Pk Volume	357	322	0	0	668	4 - 6 Pk Volume	424	721	0	0	1145
Pk Hr Factor	0.850	0.970	0.000	0.000	0.888	Pk Hr Factor	0.841	0.910	0.000	0.000	0.909

Prepared by National Data & Surveying Services

VOLUME

Lundy Ave S/O Commerce Dr

Day: Thursday
Date: 9/23/2021

City: San Jose
Project #: CA21_080228_002

DAILY TOTALS	NB	SB	EB	WB	Total
	6,634	7,328	0	0	13,962

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	10		17				27		12:00	119		132				251	
00:15	11		7				18		12:15	131		129				260	
00:30	10		5				15		12:30	120		113				233	
00:45	13	44	7	36			20	80	12:45	115	485	116	490			231	975
01:00	7		18				25		13:00	141		135				276	
01:15	8		16				24		13:15	100		114				214	
01:30	9		14				23		13:30	113		119				232	
01:45	4	28	8	56			12	84	13:45	113	467	113	481			226	948
02:00	14		6				20		14:00	124		132				256	
02:15	12		17				29		14:15	115		135				250	
02:30	9		10				19		14:30	92		172				264	
02:45	5	40	8	41			13	81	14:45	107	438	179	618			286	1056
03:00	7		12				19		15:00	97		153				250	
03:15	3		6				9		15:15	110		164				274	
03:30	12		9				21		15:30	106		221				327	
03:45	9	31	6	33			15	64	15:45	106	419	173	711			279	1130
04:00	8		9				17		16:00	70		196				266	
04:15	11		7				18		16:15	93		164				257	
04:30	17		9				26		16:30	104		219				323	
04:45	23	59	14	39			37	98	16:45	94	361	183	762			277	1123
05:00	27		12				39		17:00	125		223				348	
05:15	60		9				69		17:15	120		200				320	
05:30	64		17				81		17:30	102		173				275	
05:45	111	262	26	64			137	326	17:45	102	449	180	776			282	1225
06:00	52		27				79		18:00	116		165				281	
06:15	73		14				87		18:15	93		162				255	
06:30	91		29				120		18:30	111		134				245	
06:45	90	306	30	100			120	406	18:45	94	414	118	579			212	993
07:00	92		28				120		19:00	94		102				196	
07:15	81		36				117		19:15	74		85				159	
07:30	115		51				166		19:30	87		100				187	
07:45	145	433	82	197			227	630	19:45	87	342	68	355			155	697
08:00	124		83				207		20:00	65		72				137	
08:15	125		85				210		20:15	68		57				125	
08:30	112		85				197		20:30	59		43				102	
08:45	106	467	70	323			176	790	20:45	36	228	50	222			86	450
09:00	87		87				174		21:00	31		38				69	
09:15	94		85				179		21:15	26		21				47	
09:30	93		89				182		21:30	23		42				65	
09:45	102	376	98	359			200	735	21:45	26	106	29	130			55	236
10:00	94		77				171		22:00	26		30				56	
10:15	87		105				192		22:15	16		11				27	
10:30	75		88				163		22:30	21		27				48	
10:45	90	346	101	371			191	717	22:45	19	82	22	90			41	172
11:00	81		88				169		23:00	24		22				46	
11:15	93		122				215		23:15	13		13				26	
11:30	103		106				209		23:30	9		18				27	
11:45	117	394	117	433			234	827	23:45	11	57	9	62			20	119
TOTALS		2786		2052				**4838**	**TOTALS**		3848		5276				**9124**
SPLIT %		57.6%		42.4%				**34.7%**	**SPLIT %**		42.2%		57.8%				**65.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	6,634	7,328	0	0	13,962

AM Peak Hour	07:30	11:45				**11:45**	**PM Peak Hour**	12:15	16:30				**16:30**
AM Pk Volume	509	491				**978**	**PM Pk Volume**	507	825				**1268**
Pk Hr Factor	0.878	0.930				**0.940**	**Pk Hr Factor**	0.899	0.925				**0.911**
7 - 9 Volume	900	520	0	0		**1420**	**4 - 6 Volume**	810	1538	0	0		**2348**
7 - 9 Peak Hour	07:30	07:45				**07:45**	**4 - 6 Peak Hour**	17:00	16:30				**16:30**
7 - 9 Pk Volume	509	335	0	0		**841**	**4 - 6 Pk Volume**	449	825	0	0		**1268**
Pk Hr Factor	0.878	0.985	0.000	0.000		**0.926**	**Pk Hr Factor**	0.898	0.925	0.000	0.000		**0.911**

Prepared by National Data & Surveying Services

VOLUME

Commerce Dr E/O Lundy Ave

Day: Thursday
Date: 9/23/2021

City: San Jose
Project #: CA21_080228_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	787	671	1,458

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			2		1		3		12:00			12		11		23	
00:15			1		0		1		12:15			17		10		27	
00:30			0		1		1		12:30			7		8		15	
00:45			0	3	1	3	1	6	12:45			23	59	9	38	32	97
01:00			0		6		6		13:00			22		7		29	
01:15			0		6		6		13:15			9		8		17	
01:30			0		1		1		13:30			20		14		34	
01:45			0		1	14	1	14	13:45			16	67	25	54	41	121
02:00			0		1		1		14:00			8		30		38	
02:15			0		5		5		14:15			11		12		23	
02:30			0		2		2		14:30			9		35		44	
02:45			0		2	10	2	10	14:45			7	35	18	95	25	130
03:00			0		0		0		15:00			8		12		20	
03:15			0		0		0		15:15			1		17		18	
03:30			1		0		1		15:30			9		25		34	
03:45			0	1	0		0	1	15:45			12	30	19	73	31	103
04:00			1		0		1		16:00			5		20		25	
04:15			1		0		1		16:15			5		22		27	
04:30			2		1		3		16:30			7		18		25	
04:45			2	6	0	1	2	7	16:45			7	24	20	80	27	104
05:00			9		0		9		17:00			3		27		30	
05:15			16		1		17		17:15			5		17		22	
05:30			17		2		19		17:30			2		13		15	
05:45			43	85	3	6	46	91	17:45			7	17	16	73	23	90
06:00			17		3		20		18:00			1		7		8	
06:15			14		1		15		18:15			3		10		13	
06:30			12		5		17		18:30			8		8		16	
06:45			18	61	0	9	18	70	18:45			4	16	12	37	16	53
07:00			18		0		18		19:00			4		4		8	
07:15			15		1		16		19:15			2		3		5	
07:30			16		1		17		19:30			2		7		9	
07:45			28	77	1	3	29	80	19:45			1	9	3	17	4	26
08:00			23		5		28		20:00			6		7		13	
08:15			23		2		25		20:15			1		4		5	
08:30			25		2		27		20:30			5		5		10	
08:45			23	94	3	12	26	106	20:45			1	13	2	18	3	31
09:00			12		5		17		21:00			2		1		3	
09:15			19		5		24		21:15			3		1		4	
09:30			18		1		19		21:30			5		6		11	
09:45			18	67	4	15	22	82	21:45			6	16	2	10	8	26
10:00			17		9		26		22:00			3		4		7	
10:15			9		1		10		22:15			1		1		2	
10:30			6		5		11		22:30			3		11		14	
10:45			12	44	5	20	17	64	22:45			3	10	10	26	13	36
11:00			12		6		18		23:00			4		11		15	
11:15			11		13		24		23:15			1		2		3	
11:30			12		9		21		23:30			1		3		4	
11:45			10	45	11	39	21	84	23:45			2	8	2	18	4	26
TOTALS				483		132		**615**	**TOTALS**				304		539		**843**
SPLIT %				78.5%		21.5%		**42.2%**	**SPLIT %**				36.1%		63.9%		**57.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	787	671	1,458

AM Peak Hour			07:45	11:15	**07:45**	**PM Peak Hour**			12:45	13:45	**13:45**
AM Pk Volume			99	44	**109**	**PM Pk Volume**			74	102	**146**
Pk Hr Factor			0.884	0.846	**0.940**	**Pk Hr Factor**			0.804	0.729	**0.830**
7 - 9 Volume	0	0	171	15	**186**	**4 - 6 Volume**	0	0	41	153	**194**
7 - 9 Peak Hour			07:45	08:00	**07:45**	**4 - 6 Peak Hour**			16:00	16:15	**16:15**
7 - 9 Pk Volume	0	0	99	12	**109**	**4 - 6 Pk Volume**	0	0	24	87	**109**
Pk Hr Factor	0.000	0.000	0.884	0.600	**0.940**	**Pk Hr Factor**	0.000	0.000	0.857	0.806	**0.908**

Prepared by National Data & Surveying Services

RAMP Metering Rate Study

Location: I-880 NB Ramps
City: San Jose, CA

Date: 9/29/2021
Day: Wednesday

AM																									
INTERVAL	Ramp Metering Rate (seconds)																								NOTES
7:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Meters weren't On
7:05 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Meters weren't On
7:10 AM	4.26	4.03	4.96	4.19	4.01	3.78	3.95	3.89	4.44	4.97	3.72	4.37	4.46	3.89	4.70	3.85	4.66	3.93	4.89	3.72	4.50	4.09			
7:15 AM	4.01	3.86	3.95	4.57	3.70	4.47	3.27	3.91	3.88	3.02	4.56	3.85	3.88	4.20	3.79	3.82	3.90	4.56							
7:20 AM	4.40	3.97	4.45	4.78	3.25	4.56	4.26	3.19	4.01	4.57	4.07	4.34	3.90	4.08	3.81	4.91	3.82	4.71	4.17	4.50					
7:25 AM	3.89	3.77	4.25	4.44	4.38	3.90	4.05	4.53	4.90	3.85	4.65	4.34	4.36	4.04	4.72	3.92	3.80	3.90	4.39	4.31	3.79	3.83			
7:30 AM	4.51	4.39	4.31	4.57	4.03	3.90	4.62	4.30	4.63	3.96	4.72	3.81	3.97	4.75	4.25	4.01	3.96	4.83	3.90	3.89	3.88	3.87			
7:35 AM	3.96	3.84	4.36	4.01	3.81	4.24	3.98	3.84	4.66	3.90	4.77	3.96	3.99	4.53	3.86	3.93	4.34	4.58	4.02	4.38	4.03	4.52			
7:40 AM	3.82	3.96	3.94	4.75	3.96	4.15	3.94	3.84	4.66	3.82	4.03	4.71	3.93	4.69	4.03	3.87	4.52	4.02	4.07	4.39					
7:45 AM	4.65	4.65	4.73	4.57	4.50	4.07	4.09	3.87	3.88	4.77	4.14	4.13	4.76	4.75	4.44	3.97	3.82	4.03	3.81	4.09	4.39				
7:50 AM	3.89	4.71	3.97	4.69	3.92	4.41	4.18	4.14	3.86	4.60	4.14	4.82	4.39	3.95	4.31	3.99									
7:55 AM	4.11	3.88	4.33	4.42	3.85	4.12	3.86	4.05	4.01	4.65	4.02	4.41													
8:00 AM	4.27	4.00	4.30	3.93	4.00	4.40	4.03	3.70	3.91	4.38	3.75	3.42	3.75	3.69	3.90	3.15	4.01	3.90	3.46	3.94					
8:05 AM	4.08	4.01	4.19	3.90	3.78	3.88	3.12	3.89	4.37	4.41	4.28	5.03	4.19	3.90	4.21	4.07	4.08	3.95							
8:10 AM	3.68	3.77	3.57	4.56	4.61	3.94	4.13	4.45	4.69	4.00	3.95	4.02	4.07	4.13	4.51	4.09	4.26								
8:15 AM	3.81	4.14	3.87	4.01	4.27	4.09	4.56	3.52	3.90	4.34	3.83	4.15	4.03	4.01	3.89	4.20	4.19	3.92	3.78	3.91					
8:20 AM	4.02	4.01	4.08	4.09	4.39	4.37	4.51	3.96	4.19	4.21	4.07	3.87	4.13	4.14	3.82	3.76	4.08	4.01	4.03						
8:25 AM	4.14	4.02	4.13	4.07	4.19	3.79	3.96	3.80	4.78	4.34	4.09	3.96	4.25	4.09	4.14	4.11	3.90	4.78	4.01	3.88					
8:30 AM	3.89	3.92	3.97	4.02	3.78	3.68	4.19	4.22	4.12	4.01	4.02	4.14	3.88	4.02	4.08	4.19	4.13								
8:35 AM	3.57	3.96	4.12	4.17	4.09	4.00	4.20	3.96	4.13	3.93	3.87	3.75	4.27	4.07	3.40	4.06	4.15	4.07	3.87						
8:40 AM	3.94	4.38	4.41	4.46	4.33	4.10	4.01	4.21	4.09	4.02	4.32	3.88	3.87	4.38	4.36	4.01	3.94	3.95							
8:45 AM	4.07	4.01	4.15	4.09	4.13	4.06	3.89	4.18	4.18	4.44	4.03	4.09	3.93	4.44	3.84	3.89	4.07	4.13	4.09	4.01	4.13	4.31			
8:50 AM	4.88	4.12	4.70	4.71	4.09	4.69	4.24	4.32	4.21	4.12	4.19	4.29	4.21	4.02	4.03	4.10									
8:55 AM	4.00	4.47	3.91	4.16	4.43	4.66	4.34	4.25	4.50	4.60	4.58	4.59	4.38	4.01											

Prepared by National Data & Surveying Services

RAMP Metering Rate Study

Location: I-880 SB Ramps
City: San Jose, CA

Date: 9/29/2021
Day: Wednesday

AM																									
INTERVAL	Ramp Metering Rate (seconds)																								NOTES
4:00 PM																									
4:05 PM																									
4:10 PM	7.09	6.79	6.57	6.56	6.5	6.51	7.09	7.1	7.89																
4:15 PM	7.77	7.13	7.02	6.79	8.27	8.15	7.58																		
4:20 PM	7.90	8.05	8.02	7.83	7.90	8.13	6.69	7.95	8.14																
4:25 PM	4.64	2.45	2.79	2.98	3.21	4.19	4.57	7.36																	
4:30 PM	6.49	6.93	6.87	7.16	6.57	7.34	7.08	7.68																	
4:35 PM	7.14	7.29	3.44	2.09	2.08	2.75	2.27	1.78	1.53																
4:40 PM	1.75	5.32	5.15	2.33	3.94	2.20	6.72	5.62	5.77																
4:45 PM	6.50	6.59	6.94	6.55	6.53	4.88	5.08	6.56	5.34	5.65	6.56	6.26	5.84												
4:50 PM	5.39	4.05	4.15	2.57	6.00	5.66	3.15	2.31	2.41	5.57	2.15														
4:55 PM	5.48	5.40	5.58	6.28	2.41	2.21	2.63	2.53	2.38	2.13															
5:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4:55 to 5:05 Light Stayed Green
5:05 PM	6.99	6.44	6.71	5.56	6.57	5.69	5.90	6.27	5.53	5.56	5.28	5.78	5.55	5.52											
5:10 PM	6.33	5.69	5.54	5.38	5.66	5.71	5.02	4.42	3.25	3.39	2.08	2.09	2.25	2.51											
5:15 PM	2.00	2.18	2.12	7.19	6.51	7.03	7.14	7.75	7.09	7.09	7.05	6.50	6.70	6.36											
5:20 PM	7.02	8.01	7.14	6.94	7.27	7.28	7.48	7.19	7.14	7.34	7.20	7.25	6.77												
5:25 PM	7.83	7.76	7.16	7.69	7.94	7.81	7.83	7.93	7.26	7.13	7.39	7.15													
5:30 PM	7.19	6.87	7.90	6.99	7.64	8.06	8.12	7.19	7.14	7.63	7.08	7.20	7.33	7.15	7.01	7.21									
5:35 PM	5.28	4.32	3.28	2.69	2.59	3.13	4.08	4.01	5.40	7.48	7.15	7.08	6.69	7.02	7.13										
5:40 PM	7.15	7.19	7.57	5.40	4.08	5.39	7.23	7.02	7.14	7.20	7.46	7.18	5.01	4.63	3.34	2.96	2.64	2.27							
5:45 PM	2.26	3.28	2.38	2.19	2.13	2.57	7.02	7.13	7.21	7.08	6.31	4.20	3.82												
5:50 PM	2.37	2.76	2.28	2.65	2.70	3.15	4.13	3.22	3.25	2.09	2.07	2.53	8.05	6.77	7.58										
5:55 PM	7.29	7.61	7.34	6.91	6.76	4.24	4.19	3.39	2.81	2.79															

Appendices D – San Jose Approved Trip Inventory

AM PROJECT TRIPS

08/05/2021

Intersection of : Hostetter Rd & Lundy Av & Murphy Av

Traffix Node Number : 3106

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H14-020 (3-04341) Office/Industrial 750 RIDDER PARK DRIVE SUPERMICRO	0	0	0	0	0	0	0	0	0	0	2	0
NSJ LEGACY NORTH SAN JOSE	31	22	2	2	2	3	14	22	5	1	61	12
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	1	1	1	0	6	0	0	0	10	8	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	36	26	10	0	14	0	0	0	20	5	0	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	1	1	0	3	0	0	0	0	1	0	0
PRE05-430 COMM (3-12552) Retail/Commercial PEPPER LANE	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL:	**68**	**50**	**14**	**2**	**25**	**3**	**14**	**22**	**35**	**15**	**63**	**12**

	LEFT	**THRU**	**RIGHT**
NORTH	2	25	3
EAST	15	63	12
SOUTH	68	50	14
WEST	14	22	35

PM PROJECT TRIPS

08/05/2021

Intersection of : Hostetter Rd & Lundy Av & Murphy Av

Traffix Node Number : 3106

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H14-020 (3-04341) Office/Industrial 750 RIDDER PARK DRIVE SUPERMICRO	0	0	0	0	0	0	0	1	0	0	1	0
NSJ LEGACY NORTH SAN JOSE	20	14	5	24	26	6	5	71	19	16	45	5
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	9	6	7	0	1	0	0	0	2	1	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	19	14	5	0	26	0	0	0	36	9	0	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	9	4	0	9	0	0	0	0	4	0	0
PRE05-430 COMM (3-12552) Retail/Commercial PEPPER LANE	0	0	0	0	0	0	0	8	0	0	7	0

TOTAL:	**48**	**43**	**21**	**24**	**62**	**6**	**5**	**80**	**57**	**30**	**53**	**5**

	LEFT	**THRU**	**RIGHT**
NORTH	24	62	6
EAST	30	53	5
SOUTH	48	43	21
WEST	5	80	57

AM PROJECT TRIPS

08/05/2021

Intersection of : N Capitol Av & Cropley Av & Trade Zone Bl

Traffix Node Number : 3381

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	29	24	4	0	4	0	4	18	20	2	5	2
PDC88-08-097 (3-06700) Residential CROPLEY & OLD PIEDMONT BRANCATO - 39 UNITS	0	0	0	0	0	0	0	1	0	0	5	0
TOTAL:	**29**	**24**	**4**	**0**	**4**	**0**	**4**	**19**	**20**	**2**	**10**	**2**

	LEFT	THRU	RIGHT
NORTH	0	4	0
EAST	2	10	2
SOUTH	29	24	4
WEST	4	19	20

PM PROJECT TRIPS

08/05/2021

Intersection of : N Capitol Av & Cropley Av & Trade Zone Bl

Traffix Node Number : 3381

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	16	38	19	4	33	1	1	12	13	3	2	1
PDC88-08-097 (3-06700) Residential CROPLEY & OLD PIEDMONT BRANCATO - 39 UNITS	0	0	0	0	0	0	0	5	0	0	1	0
TOTAL:	**16**	**38**	**19**	**4**	**33**	**1**	**1**	**17**	**13**	**3**	**3**	**1**

	LEFT	THRU	RIGHT
NORTH	4	33	1
EAST	3	3	1
SOUTH	16	38	19
WEST	1	17	13

AM PROJECT TRIPS

08/05/2021

Intersection of : Fortune Dr & Lundy Av

Traffix Node Number : 3531

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	3	7	0	1	6	2	0	0	0	0	0	1
TOTAL:	**3**	**7**	**0**	**1**	**6**	**2**	**0**	**0**	**0**	**0**	**0**	**1**

	LEFT	THRU	RIGHT
NORTH	1	6	2
EAST	0	0	1
SOUTH	3	7	0
WEST	0	0	0

PM PROJECT TRIPS

08/05/2021

Intersection of : Fortune Dr & Lundy Av

Traffix Node Number : 3531

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	4	19	0	0	10	2	0	0	0	0	0	2
TOTAL:	**4**	**19**	**0**	**0**	**10**	**2**	**0**	**0**	**0**	**0**	**0**	**2**

	LEFT	THRU	RIGHT
NORTH	0	10	2
EAST	0	0	2
SOUTH	4	19	0
WEST	0	0	0

AM PROJECT TRIPS

08/05/2021

Intersection of : Lundy Av & Lundy Pl & Trade Zone Bl

Traffix Node Number : 3663

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	6	1	2	0	0	0	10	17	35	10	11	1
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	0	0	0	0	0	0	0	3	0	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	13	0	0	0	0	0	0	0	7	0	0	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**19**	**1**	**2**	**0**	**0**	**0**	**10**	**17**	**45**	**10**	**11**	**1**

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	10	11	1
SOUTH	19	1	2
WEST	10	17	45

PM PROJECT TRIPS

08/05/2021

Intersection of : Lundy Av & Lundy Pl & Trade Zone Bl

Traffix Node Number : 3663

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	8	0	11	0	0	0	0	24	11	34	20	1
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	3	0	0	0	0	0	0	0	1	0	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	6	0	0	0	0	0	0	0	12	0	0	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	5	0	1	2	0	0	0	0	11
TOTAL:	**17**	**0**	**11**	**5**	**0**	**1**	**2**	**24**	**24**	**34**	**20**	**12**

	LEFT	THRU	RIGHT
NORTH	5	0	1
EAST	34	20	12
SOUTH	17	0	11
WEST	2	24	24

AM PROJECT TRIPS

08/05/2021

Intersection of : Hostetter Rd & NB 680 To Hostetter Rp

Traffix Node Number : 3943

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	0	0	0	0	0	0	0	26	0	0	61	0
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	0	0	0	0	0	0	2	0	0	13	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	0	0	0	0	0	0	0	20	0	0	11	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	**0**	**0**	**85**	**0**

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	0	85	0
SOUTH	0	0	0
WEST	0	48	0

PM PROJECT TRIPS

08/05/2021

Intersection of : Hostetter Rd & NB 680 To Hostetter Rp

Traffix Node Number : 3943

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	0	0	0	0	0	0	0	70	0	0	54	0
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	0	0	0	0	0	0	11	0	0	2	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	0	0	0	0	0	0	0	10	0	0	20	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**91**	**0**	**0**	**76**	**0**

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	0	76	0
SOUTH	0	0	0
WEST	0	91	0

AM PROJECT TRIPS

08/05/2021

Intersection of : Concourse Dr & Lundy Av

Traffix Node Number : 3984

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	2	9	0	2	8	1	0	0	0	0	0	0
TOTAL:	**2**	**9**	**0**	**2**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	2	8	1
EAST	0	0	0
SOUTH	2	9	0
WEST	0	0	0

PM PROJECT TRIPS

08/05/2021

Intersection of : Concourse Dr & Lundy Av

Traffix Node Number : 3984

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ LEGACY NORTH SAN JOSE	1	22	0	1	14	0	0	0	0	0	0	0
TOTAL:	**1**	**22**	**0**	**1**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	1	14	0
EAST	0	0	0
SOUTH	1	22	0
WEST	0	0	0

AM PROJECT TRIPS

08/05/2021

Intersection of : S Main St & Old Oakland Rd & Montague Ex

Traffix Node Number : 5801

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C15-054 (3-14457) Office/Industrial 1657 ALVISO-MILPITAS ROAD 237 INDUSTRIAL CENTER/ CILKER	0	0	0	0	0	6	1	3	0	0	18	0
H14-011 (3-18810) Retail/Commercial NW CORNER OF SR 237 AND N. FIRST STREET HOMEWOOD SUITES HOTEL	0	0	0	0	0	0	0	0	0	0	1	0
H14-020 (3-04341) Office/Industrial 750 RIDDER PARK DRIVE SUPERMICRO	0	0	1	0	0	0	0	0	0	4	0	0
NSJ LEGACY NORTH SAN JOSE	34	29	4	11	13	19	20	144	27	9	133	5
PD13-012 (3-09684) Office/Industrial NW CORNER OF SR237 AND N. FIRST STREET SOUTH BAY	0	0	0	0	0	6	2	5	0	0	19	0
PD13-039 (3-18698) Office/Industrial NW CORNER OF NORTHECH PKWY AND DISK DR TRAMMEL CROW (R&D)	0	0	0	0	0	0	0	0	0	0	0	0
PD14-007 (3-18698) Office/Industrial NW CORNER OF NORTECH PKWY AND DISK DR TRAMMEL CROW (MFG.)	0	0	0	0	0	4	0	2	0	0	12	0

AM PROJECT TRIPS

08/05/2021

Intersection of : S Main St & Old Oakland Rd & Montague Ex

Traffix Node Number : 5801

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	1	0	2	4	0	0	1	0	0	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	0	13	0	4	7	0	0	3	0	0	5	7
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**34**	**43**	**5**	**17**	**24**	**35**	**23**	**158**	**27**	**13**	**188**	**12**

	LEFT	THRU	RIGHT
NORTH	17	24	35
EAST	13	188	12
SOUTH	34	43	5
WEST	23	158	27

PM PROJECT TRIPS

08/05/2021

Intersection of : S Main St & Old Oakland Rd & Montague Ex

Traffix Node Number : 5801

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C15-054 (3-14457) Office/Industrial 1657 ALVISO-MILPITAS ROAD 237 INDUSTRIAL CENTER/ CILKER	0	0	0	0	0	1	7	20	0	0	3	0
H14-011 (3-18810) Retail/Commercial NW CORNER OF SR 237 AND N. FIRST STREET HOMEWOOD SUITES HOTEL	0	0	0	0	0	0	0	0	0	0	1	0
H14-020 (3-04341) Office/Industrial 750 RIDDER PARK DRIVE SUPERMICRO	0	0	3	0	0	0	0	0	0	2	0	0
NSJ LEGACY NORTH SAN JOSE	25	49	21	10	25	13	39	169	23	28	180	22
PD13-012 (3-09684) Office/Industrial NW CORNER OF SR237 AND N. FIRST STREET SOUTH BAY	0	0	0	0	0	1	6	19	0	0	2	0
PD13-039 (3-18698) Office/Industrial NW CORNER OF NORTHECH PKWY AND DISK DR TRAMMEL CROW (R&D)	0	0	0	0	0	0	0	0	0	0	0	0
PD14-007 (3-18698) Office/Industrial NW CORNER OF NORTECH PKWY AND DISK DR TRAMMEL CROW (MFG.)	0	0	0	0	0	1	3	11	0	0	2	0

PM PROJECT TRIPS

08/05/2021

Intersection of : S Main St & Old Oakland Rd & Montague Ex

Traffix Node Number : 5801

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	3	0	0	1	0	0	0	0	0	1	2
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	0	7	0	7	13	0	0	5	0	0	3	3
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**25**	**59**	**24**	**17**	**39**	**16**	**55**	**224**	**23**	**30**	**192**	**27**

	LEFT	THRU	RIGHT
NORTH	17	39	16
EAST	30	192	27
SOUTH	25	59	24
WEST	55	224	23

AM PROJECT TRIPS

08/05/2021

Intersection of : McCandless Dr & Montague Ex / Trade Zone Bl & W Montague Ex

Traffix Node Number : 5802

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C15-054 (3-14457) Office/Industrial 1657 ALVISO-MILPITAS ROAD 237 INDUSTRIAL CENTER/ CILKER	6	0	0	0	0	0	0	2	1	0	12	0
H14-011 (3-18810) Retail/Commercial NW CORNER OF SR 237 AND N. FIRST STREET HOMEWOOD SUITES HOTEL	0	0	0	0	0	0	0	0	0	0	1	0
H14-020 (3-04341) Office/Industrial 750 RIDDER PARK DRIVE SUPERMICRO	0	0	0	0	0	0	0	1	0	0	4	0
NSJ LEGACY NORTH SAN JOSE	22	0	8	0	1	0	15	69	65	14	105	2
PD13-012 (3-09684) Office/Industrial NW CORNER OF SR237 AND N. FIRST STREET SOUTH BAY	6	0	0	0	0	0	0	3	2	0	13	0
PD13-039 (3-18698) Office/Industrial NW CORNER OF NORTHECH PKWY AND DISK DR TRAMMEL CROW (R&D)	0	0	0	0	0	0	0	0	0	0	0	0
PD14-007 (3-18698) Office/Industrial NW CORNER OF NORTECH PKWY AND DISK DR TRAMMEL CROW (MFG.)	4	0	0	0	0	0	0	1	0	0	8	0

AM PROJECT TRIPS

08/05/2021

Intersection of : McCandless Dr & Montague Ex / Trade Zone Bl & W Montague Ex

Traffix Node Number : 5802

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	0	0	0	0	0	0	0	3	0	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	13	0	0	0	0	0	0	0	7	0	0	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**51**	**0**	**8**	**0**	**1**	**0**	**15**	**76**	**78**	**14**	**143**	**2**

	LEFT	THRU	RIGHT
NORTH	0	1	0
EAST	14	143	2
SOUTH	51	0	8
WEST	15	76	78

PM PROJECT TRIPS

08/05/2021

Intersection of : McCandless Dr & Montague Ex / Trade Zone Bl & W Montague Ex

Traffix Node Number : 5802

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C15-054 (3-14457) Office/Industrial 1657 ALVISO-MILPITAS ROAD 237 INDUSTRIAL CENTER/ CILKER	1	0	0	0	0	0	0	13	7	0	2	0
H14-011 (3-18810) Retail/Commercial NW CORNER OF SR 237 AND N. FIRST STREET HOMEWOOD SUITES HOTEL	0	4	0	2	3	0	1	0	0	0	0	2
H14-020 (3-04341) Office/Industrial 750 RIDDER PARK DRIVE SUPERMICRO	0	0	0	0	0	0	0	3	0	0	2	0
NSJ LEGACY NORTH SAN JOSE	66	8	14	5	10	8	1	96	59	15	109	3
PD13-012 (3-09684) Office/Industrial NW CORNER OF SR237 AND N. FIRST STREET SOUTH BAY	1	0	0	0	0	0	0	12	6	0	1	0
PD13-039 (3-18698) Office/Industrial NW CORNER OF NORTHECH PKWY AND DISK DR TRAMMEL CROW (R&D)	0	0	0	0	0	0	0	0	0	0	0	0
PD14-007 (3-18698) Office/Industrial NW CORNER OF NORTECH PKWY AND DISK DR TRAMMEL CROW (MFG.)	1	0	0	0	0	0	0	7	3	0	1	0

PM PROJECT TRIPS

08/05/2021

Intersection of : McCandless Dr & Montague Ex / Trade Zone Bl & W Montague Ex

Traffix Node Number : 5802

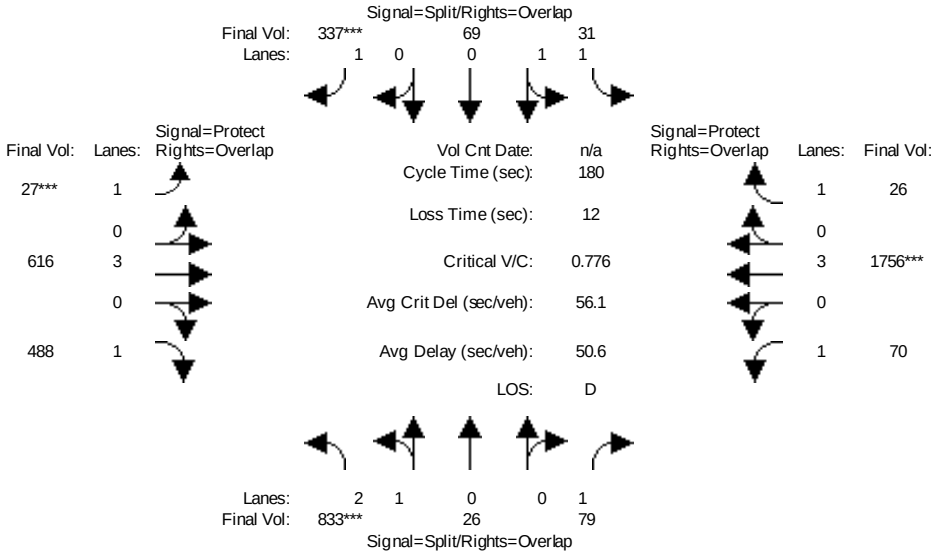
Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	3	0	0	0	0	0	0	0	1	0	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	6	0	0	0	0	0	0	0	12	0	0	0
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	2	7	0	0	0	0	0	0	0	0	0	0
TOTAL:	**80**	**19**	**14**	**7**	**13**	**8**	**2**	**131**	**88**	**15**	**115**	**5**

	LEFT	THRU	RIGHT
NORTH	7	13	8
EAST	15	115	5
SOUTH	80	19	14
WEST	2	131	88

Appendices E – TRAFFIX Intersection Operations Analysis

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #1: Montague / Trade Zone

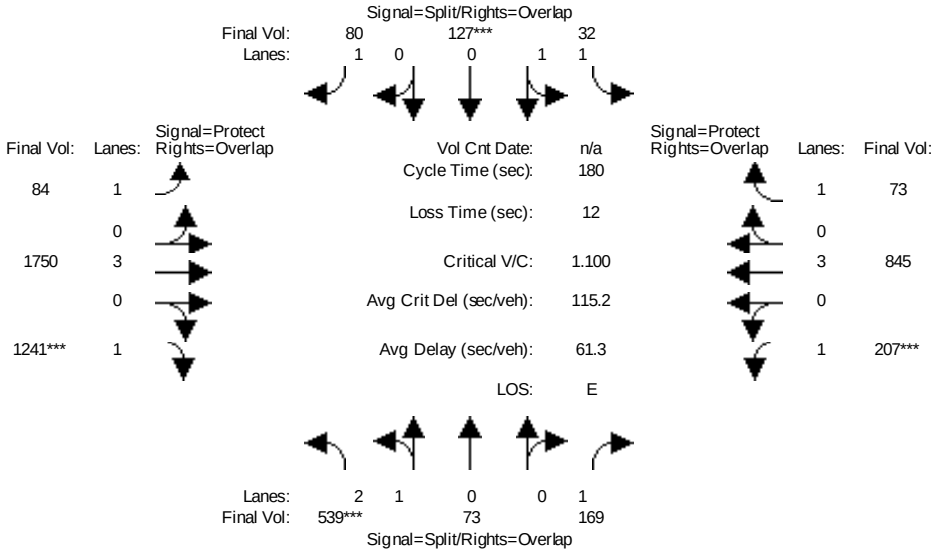


Street Name:	Trade Zone Blvd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	833	26	79	31	69	337	27	616	488	70	1756	26
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:	833	26	79	31	69	337	27	616	488	70	1756	26
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:	833	26	79	31	69	337	27	616	488	70	1756	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	833	26	79	31	69	337	27	616	488	70	1756	26
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:	833	26	79	31	69	337	27	616	488	70	1756	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.95	0.78	0.91	0.99	0.78	0.88	1.00	0.78	0.88	1.00	0.78
Lanes:	2.92	0.08	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	4394	137	1488	1724	1872	1488	1663	5700	1488	1663	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.05	0.02	0.04	0.23	0.02	0.11	0.33	0.04	0.31	0.02
Crit Moves:	****					****	****				****	
Green/Cycle:	0.25	0.25	0.35	0.24	0.24	0.28	0.04	0.34	0.59	0.10	0.40	0.65
Volume/Cap:	0.77	0.77	0.15	0.07	0.15	0.80	0.42	0.32	0.56	0.41	0.77	0.03
Uniform Del:	62.9	62.9	40.1	52.3	53.3	59.7	84.5	44.2	23.0	75.6	46.5	11.4
IncremntDel:	3.2	3.2	0.1	0.0	0.1	10.3	4.3	0.1	0.8	1.6	1.6	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.1	66.1	40.3	52.3	53.4	70.0	88.8	44.3	23.8	77.2	48.1	11.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.1	66.1	40.3	52.3	53.4	70.0	88.8	44.3	23.8	77.2	48.1	11.4
LOS by Move:	E	E	D	D	D	E	F	D	C	E	D	B
HCM2k95thQ:	32	32	6	3	6	34	3	15	30	8	46	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #1: Montague / Trade Zone

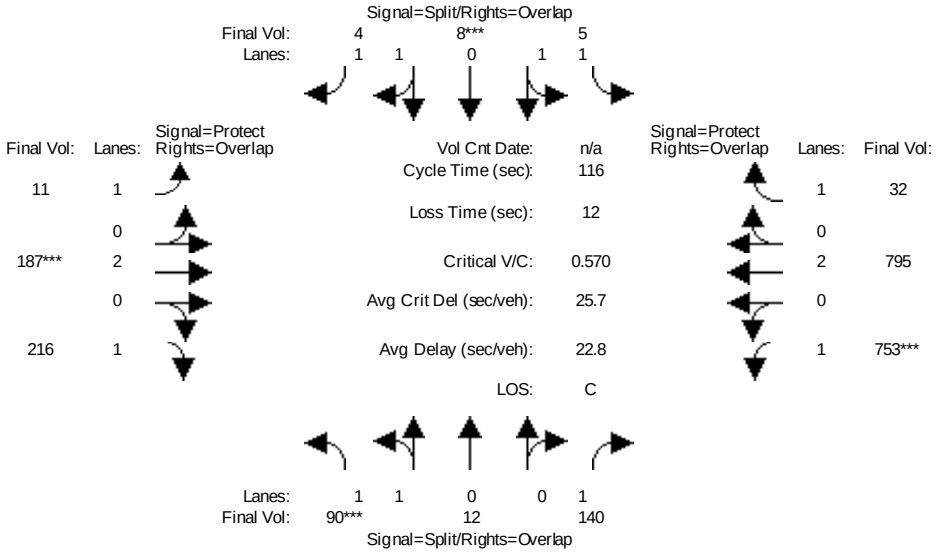


Street Name:	Trade Zone Blvd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	539	73	169	32	127	80	84	1750	1241	207	845	73
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:	539	73	169	32	127	80	84	1750	1241	207	845	73
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:	539	73	169	32	127	80	84	1750	1241	207	845	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	539	73	169	32	127	80	84	1750	1241	207	845	73
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:	539	73	169	32	127	80	84	1750	1241	207	845	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.96	0.78	0.91	0.99	0.78	0.88	1.00	0.78	0.88	1.00	0.78
Lanes:	2.70	0.30	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	4070	551	1488	1733	1881	1488	1663	5700	1488	1663	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.11	0.02	0.07	0.05	0.05	0.31	0.83	0.12	0.15	0.05
Crit Moves:	****				****				****	****		
Green/Cycle:	0.12	0.12	0.23	0.06	0.06	0.25	0.19	0.64	0.76	0.11	0.56	0.62
Volume/Cap:	1.10	1.10	0.49	0.30	1.10	0.21	0.26	0.48	1.10	1.10	0.26	0.08
Uniform Del:	79.2	79.2	59.6	80.8	84.5	53.2	62.0	17.0	21.7	79.8	20.4	13.5
IncremntDel:	68.3	68.3	1.1	0.3	104	0.3	0.4	0.1	58.4	94.8	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	147.4	147	60.7	81.1	189	53.4	62.5	17.1	80.1	174.6	20.5	13.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	147.4	147	60.7	81.1	189	53.4	62.5	17.1	80.1	174.6	20.5	13.6
LOS by Move:	F	F	E	F	F	D	E	B	F	F	C	B
HCM2k95thQ:	33	33	17	4	20	7	8	28	132	31	14	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #2: Trade Zone / Lundy

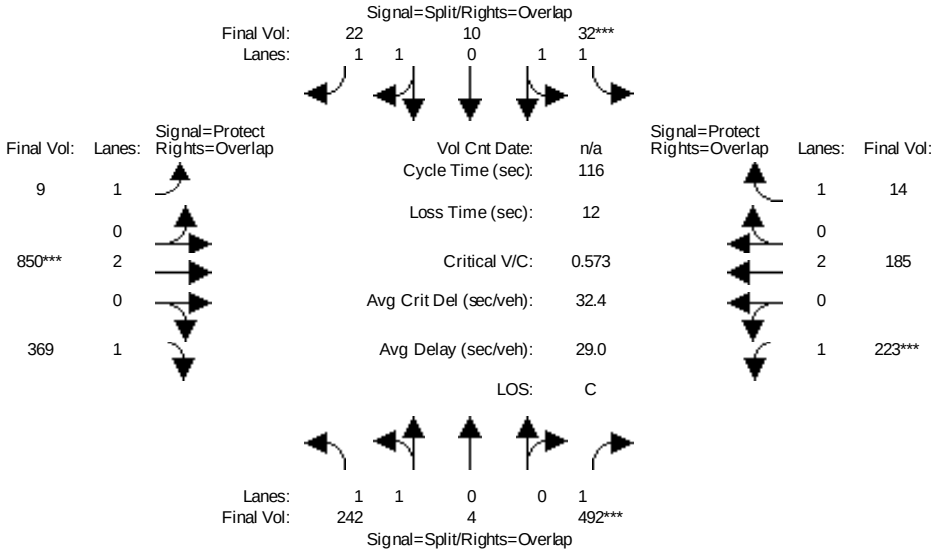


Street Name:	Lundy Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	90	12	140	5	8	4	11	187	216	753	795	32
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:	90	12	140	5	8	4	11	187	216	753	795	32
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:	90	12	140	5	8	4	11	187	216	753	795	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	12	140	5	8	4	11	187	216	753	795	32
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:	90	12	140	5	8	4	11	187	216	753	795	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.78	0.22	1.00	1.21	1.79	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3117	416	1750	2122	3396	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.08	0.00	0.00	0.00	0.01	0.05	0.12	0.43	0.21	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.09	0.09	0.72	0.09	0.09	0.25	0.16	0.09	0.17	0.64	0.56	0.65
Volume/Cap:	0.33	0.33	0.11	0.03	0.03	0.01	0.04	0.57	0.72	0.67	0.37	0.03
Uniform Del:	49.9	49.9	4.8	48.5	48.5	32.8	41.0	50.9	45.3	13.3	14.1	7.3
IncremntDel:	0.7	0.7	0.0	0.0	0.0	0.0	0.1	2.4	8.0	1.6	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.5	50.5	4.8	48.6	48.6	32.8	41.0	53.3	53.3	15.0	14.2	7.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.5	50.5	4.8	48.6	48.6	32.8	41.0	53.3	53.3	15.0	14.2	7.3
LOS by Move:	D	D	A	D	D	C	D	D	D	B	B	A
HCM2k95thQ:	4	4	3	0	0	0	1	8	17	31	14	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #2: Trade Zone / Lundy

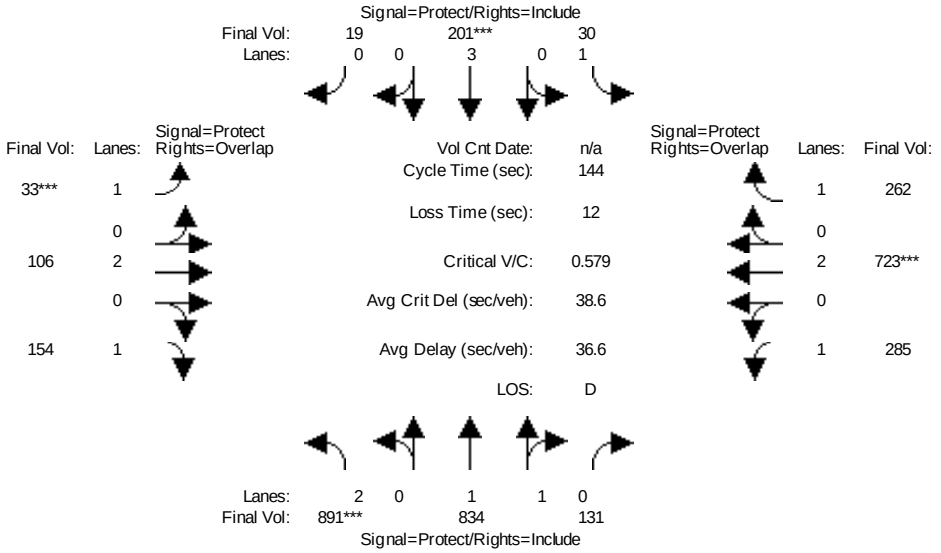


Street Name:	Lundy Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	242	4	492	32	10	22	9	850	369	223	185	14
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:	242	4	492	32	10	22	9	850	369	223	185	14
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:	242	4	492	32	10	22	9	850	369	223	185	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	4	492	32	10	22	9	850	369	223	185	14
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:	242	4	492	32	10	22	9	850	369	223	185	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.97	0.03	1.00	2.00	0.59	1.41	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3448	57	1750	3500	1121	2467	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.28	0.01	0.01	0.01	0.01	0.22	0.21	0.13	0.05	0.01
Crit Moves:			****	****				****		****		
Green/Cycle:	0.25	0.25	0.45	0.09	0.09	0.32	0.23	0.36	0.61	0.20	0.33	0.42
Volume/Cap:	0.28	0.28	0.62	0.11	0.10	0.03	0.02	0.62	0.35	0.62	0.15	0.02
Uniform Del:	35.4	35.4	24.3	48.9	48.9	27.2	34.4	30.7	11.4	42.1	27.2	19.8
IncremntDel:	0.2	0.2	1.6	0.1	0.1	0.0	0.0	0.9	0.2	3.4	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	35.6	35.6	25.8	49.0	48.9	27.2	34.4	31.6	11.6	45.5	27.3	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.6	35.6	25.8	49.0	48.9	27.2	34.4	31.6	11.6	45.5	27.3	19.8
LOS by Move:	D	D	C	D	D	C	C	C	B	D	C	B
HCM2k95thQ:	7	7	25	1	1	1	1	23	13	15	4	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #3: Trade Zone / N Capitol

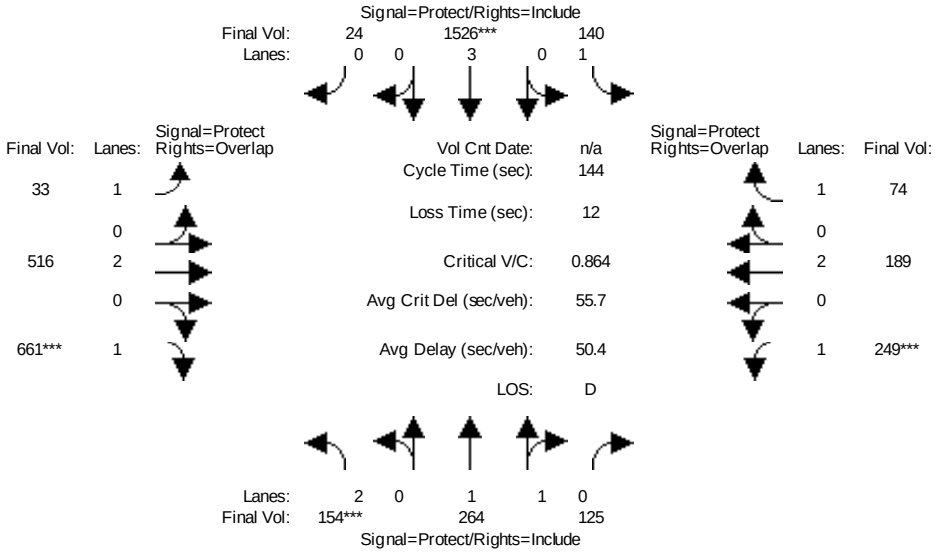


Street Name:	N Capitol Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	891	834	131	30	201	19	33	106	154	285	723	262
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:	891	834	131	30	201	19	33	106	154	285	723	262
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:	891	834	131	30	201	19	33	106	154	285	723	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	891	834	131	30	201	19	33	106	154	285	723	262
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:	891	834	131	30	201	19	33	106	154	285	723	262
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.71	0.29	1.00	2.72	0.28	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	3246	510	1750	5169	489	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.28	0.26	0.26	0.02	0.04	0.04	0.02	0.03	0.09	0.16	0.19	0.15
Crit Moves:	****				****		****				****	
Green/Cycle:	0.48	0.43	0.43	0.12	0.07	0.07	0.05	0.11	0.59	0.26	0.32	0.44
Volume/Cap:	0.59	0.60	0.60	0.15	0.56	0.56	0.39	0.25	0.15	0.63	0.59	0.34
Uniform Del:	27.4	31.4	31.4	57.2	64.9	64.9	66.4	58.6	13.4	47.2	41.0	26.8
IncremntDel:	0.6	0.6	0.6	0.3	1.8	1.8	2.9	0.3	0.1	2.8	0.8	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.1	32.0	32.0	57.5	66.7	66.7	69.3	58.9	13.5	50.0	41.8	27.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.1	32.0	32.0	57.5	66.7	66.7	69.3	58.9	13.5	50.0	41.8	27.1
LOS by Move:	C	C	C	E	E	E	E	E	B	D	D	C
HCM2k95thQ:	30	29	29	3	8	8	3	4	6	23	24	15

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #3: Trade Zone / N Capitol

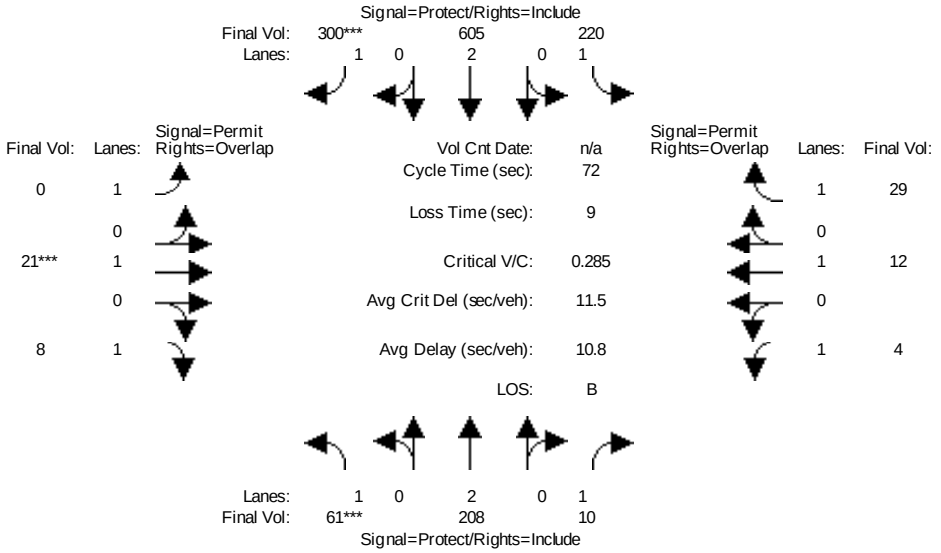


Street Name:	N Capitol Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	154	264	125	140	1526	24	33	516	661	249	189	74
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:	154	264	125	140	1526	24	33	516	661	249	189	74
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:	154	264	125	140	1526	24	33	516	661	249	189	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	264	125	140	1526	24	33	516	661	249	189	74
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:	154	264	125	140	1526	24	33	516	661	249	189	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.32	0.68	1.00	2.95	0.05	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	2510	1188	1750	5604	88	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.11	0.11	0.08	0.27	0.27	0.02	0.14	0.38	0.14	0.05	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.06	0.21	0.21	0.16	0.32	0.32	0.22	0.38	0.44	0.16	0.32	0.48
Volume/Cap:	0.86	0.50	0.50	0.50	0.86	0.86	0.08	0.36	0.86	0.86	0.16	0.09
Uniform Del:	67.4	50.1	50.1	55.2	46.4	46.4	44.1	32.0	36.7	58.6	35.0	20.2
IncremntDel:	32.8	0.5	0.5	1.4	4.7	4.7	0.1	0.2	10.1	22.7	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	100.2	50.6	50.6	56.5	51.1	51.1	44.2	32.1	46.7	81.3	35.0	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	100.2	50.6	50.6	56.5	51.1	51.1	44.2	32.1	46.7	81.3	35.0	20.3
LOS by Move:	F	D	D	E	D	D	D	C	D	F	D	C
HCM2k95thQ:	12	15	15	12	40	40	2	15	47	25	6	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #4: Lundy / Fortune

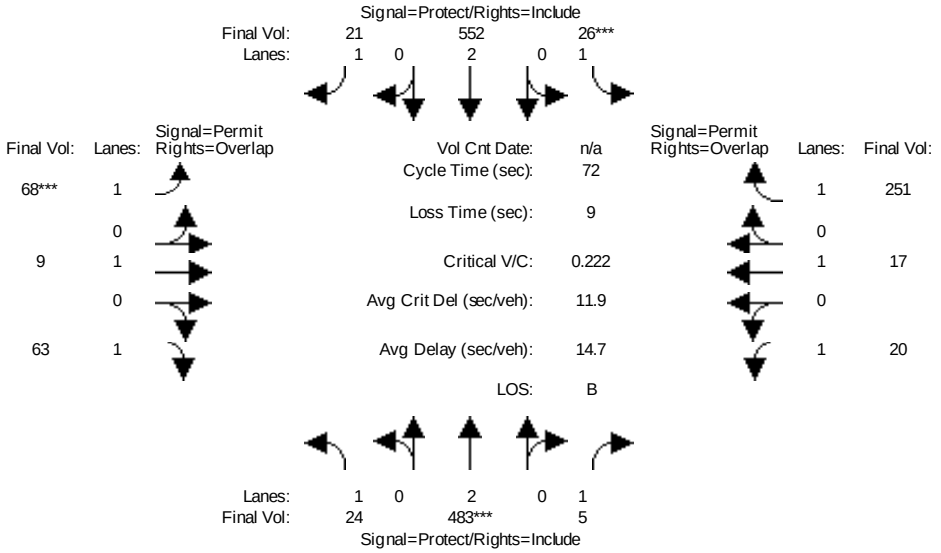


Street Name:	Lundy Ave						Fortune Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	61	208	10	220	605	300	0	21	8	4	12	29
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:	61	208	10	220	605	300	0	21	8	4	12	29
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:	61	208	10	220	605	300	0	21	8	4	12	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	208	10	220	605	300	0	21	8	4	12	29
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:	61	208	10	220	605	300	0	21	8	4	12	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.92	1.00	0.78	0.69	1.00	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1750	1900	1488	1314	1900	1488
Capacity Analysis Module:												
Vol/Sat:	0.04	0.05	0.01	0.13	0.16	0.20	0.00	0.01	0.01	0.00	0.01	0.02
Crit Moves:	****					****		****				
Green/Cycle:	0.11	0.37	0.37	0.37	0.62	0.62	0.00	0.14	0.25	0.14	0.14	0.51
Volume/Cap:	0.32	0.15	0.02	0.36	0.26	0.32	0.00	0.08	0.02	0.02	0.05	0.04
Uniform Del:	29.4	15.2	14.5	16.6	6.1	6.4	0.0	27.0	20.2	26.8	26.9	8.9
IncremntDel:	1.0	0.0	0.0	0.4	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.4	15.3	14.5	16.9	6.1	6.6	0.0	27.1	20.3	26.8	26.9	8.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	15.3	14.5	16.9	6.1	6.6	0.0	27.1	20.3	26.8	26.9	8.9
LOS by Move:	C	B	B	B	A	A	A	C	C	C	C	A
HCM2k95thQ:	3	3	0	7	6	7	0	1	0	0	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #4: Lundy / Fortune

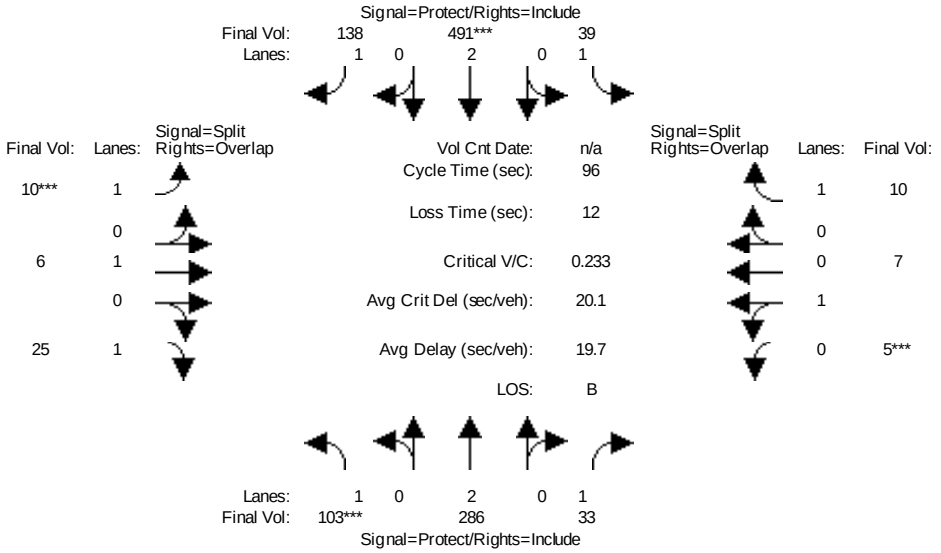


Street Name:	Lundy Ave						Fortune Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	24	483	5	26	552	21	68	9	63	20	17	251
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	483	5	26	552	21	68	9	63	20	17	251
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:	24	483	5	26	552	21	68	9	63	20	17	251
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	483	5	26	552	21	68	9	63	20	17	251
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:	24	483	5	26	552	21	68	9	63	20	17	251
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.69	1.00	0.78	0.70	1.00	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1320	1900	1488	1332	1900	1488
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.00	0.02	0.15	0.01	0.05	0.00	0.04	0.02	0.01	0.17
Crit Moves:		****			****			****				
Green/Cycle:	0.27	0.52	0.52	0.14	0.40	0.40	0.21	0.21	0.48	0.21	0.21	0.35
Volume/Cap:	0.05	0.24	0.01	0.11	0.37	0.04	0.24	0.02	0.09	0.07	0.04	0.48
Uniform Del:	19.7	9.4	8.2	27.1	15.3	13.3	23.5	22.4	10.2	22.7	22.5	18.2
IncremntDel:	0.1	0.1	0.0	0.2	0.2	0.0	0.5	0.0	0.1	0.1	0.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.7	9.4	8.2	27.3	15.5	13.3	24.0	22.5	10.3	22.8	22.6	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.7	9.4	8.2	27.3	15.5	13.3	24.0	22.5	10.3	22.8	22.6	18.9
LOS by Move:	B	A	A	C	B	B	C	C	B	C	C	B
HCM2k95thQ:	1	6	0	1	8	1	3	0	2	1	1	10

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #5: Lundy / Concourse

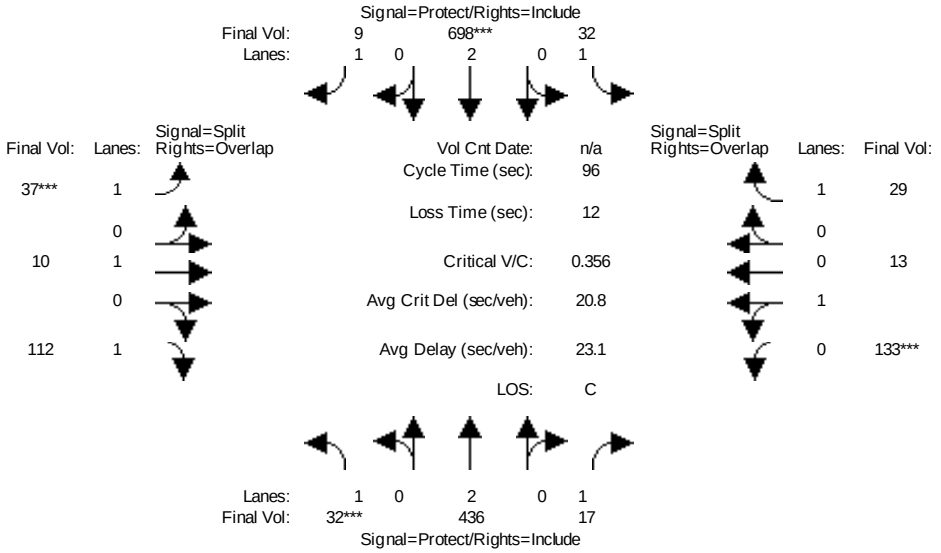


Street Name:	Lundy Ave						Concourse Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	103	286	33	39	491	138	10	6	25	5	7	10
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:	103	286	33	39	491	138	10	6	25	5	7	10
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:	103	286	33	39	491	138	10	6	25	5	7	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	286	33	39	491	138	10	6	25	5	7	10
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:	103	286	33	39	491	138	10	6	25	5	7	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.88	1.00	0.78	0.90	0.98	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	0.44	0.56	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1663	1900	1488	749	1049	1488
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.02	0.02	0.13	0.09	0.01	0.00	0.02	0.01	0.01	0.01
Crit Moves:	****				****		****			****		
Green/Cycle:	0.22	0.39	0.39	0.27	0.45	0.45	0.10	0.10	0.32	0.10	0.10	0.38
Volume/Cap:	0.29	0.19	0.06	0.09	0.29	0.21	0.06	0.03	0.05	0.06	0.06	0.02
Uniform Del:	31.4	19.2	18.1	25.9	16.6	16.0	38.8	38.6	22.6	38.8	38.8	18.7
IncremntDel:	0.4	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.9	19.2	18.2	26.0	16.7	16.1	38.9	38.7	22.6	38.9	38.9	18.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.9	19.2	18.2	26.0	16.7	16.1	38.9	38.7	22.6	38.9	38.9	18.7
LOS by Move:	C	B	B	C	B	B	D	D	C	D	D	B
HCM2k95thQ:	5	5	1	2	9	5	1	0	1	1	1	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #5: Lundy / Concourse

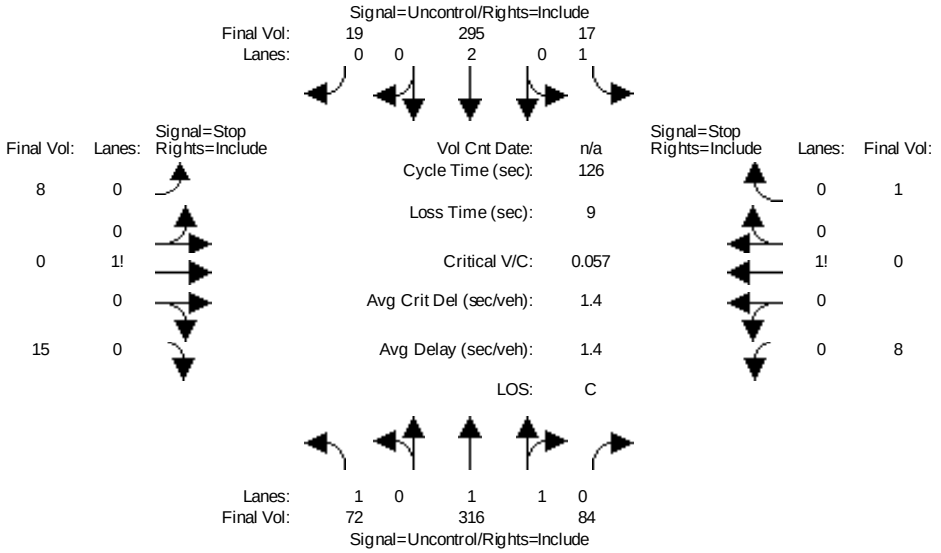


Street Name:	Lundy Ave						Concourse Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	32	436	17	32	698	9	37	10	112	133	13	29
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:	32	436	17	32	698	9	37	10	112	133	13	29
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:	32	436	17	32	698	9	37	10	112	133	13	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	436	17	32	698	9	37	10	112	133	13	29
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:	32	436	17	32	698	9	37	10	112	133	13	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.88	1.00	0.78	0.88	0.96	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	0.92	0.08	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1663	1900	1488	1535	150	1488
Capacity Analysis Module:												
Vol/Sat:	0.02	0.11	0.01	0.02	0.18	0.01	0.02	0.01	0.08	0.09	0.09	0.02
Crit Moves:	****				****		****			****		
Green/Cycle:	0.07	0.33	0.33	0.21	0.47	0.47	0.10	0.10	0.18	0.22	0.22	0.44
Volume/Cap:	0.26	0.34	0.03	0.09	0.39	0.01	0.21	0.05	0.43	0.39	0.39	0.04
Uniform Del:	42.1	24.0	21.5	30.3	16.3	13.4	39.4	38.7	35.2	31.7	31.7	15.6
IncremntDel:	1.2	0.2	0.0	0.1	0.1	0.0	0.6	0.1	1.1	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	24.2	21.5	30.5	16.4	13.4	40.0	38.8	36.3	32.3	32.3	15.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	24.2	21.5	30.5	16.4	13.4	40.0	38.8	36.3	32.3	32.3	15.6
LOS by Move:	D	C	C	C	B	B	D	D	D	C	C	B
HCM2k95thQ:	2	9	1	2	12	0	3	1	7	8	8	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
EX_AM

Intersection #6: Lundy / Commerce



Street Name:	Lundy Ave						Commerce Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	72	316	84	17	295	19	8	0	15	8	0	1
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:	72	316	84	17	295	19	8	0	15	8	0	1
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:	72	316	84	17	295	19	8	0	15	8	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	72	316	84	17	295	19	8	0	15	8	0	1
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	314	xxxx	xxxxx	400	xxxx	xxxxx	641	883	157	684	850	200
Potent Cap.:	1258	xxxx	xxxxx	1170	xxxx	xxxxx	364	287	867	339	300	814
Move Cap.:	1258	xxxx	xxxxx	1170	xxxx	xxxxx	344	267	867	315	278	814
Volume/Cap:	0.06	xxxx	xxxx	0.01	xxxx	xxxx	0.02	0.00	0.02	0.03	0.00	0.00
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.0	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	567	xxxxx	xxxx	338	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.6	xxxxx	xxxxx	15.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.6			15.9		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #6 Lundy / Commerce

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R

```
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   72  316    84    17  295    19     8    0    15     8    0     1
ApproachDel:    xxxxxx           xxxxxx             11.6             15.9
------------|--------------||--------------||--------------||--------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=835]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=9]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=835]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #6 Lundy / Commerce
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|--------------||--------------||--------------||--------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   72  316    84    17  295    19     8    0    15     8    0     1
------------|--------------||--------------||--------------||--------------|
Major Street Volume:             803
Minor Approach Volume:           23
Minor Approach Volume Threshold: 360
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
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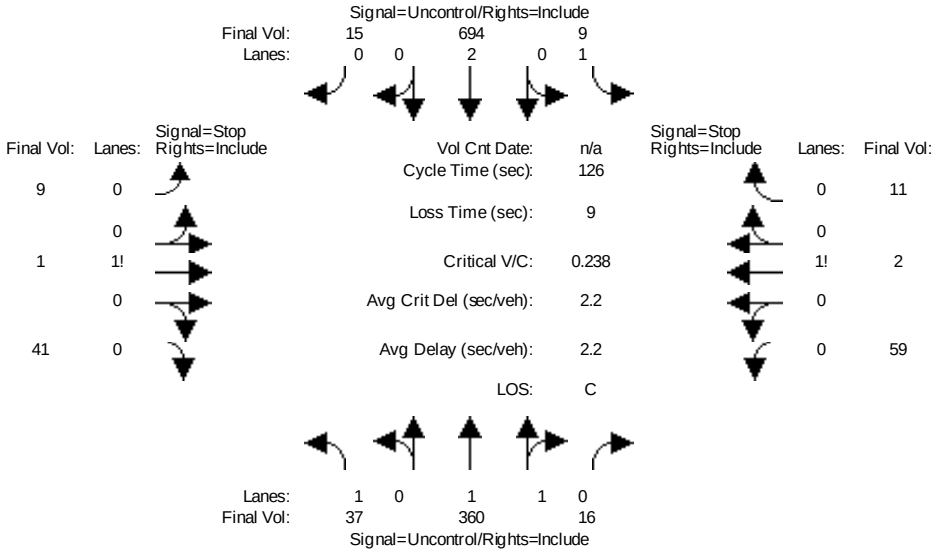
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
EX_PM

Intersection #6: Lundy / Commerce



Street Name:	Lundy Ave						Commerce Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	37	360	16	9	694	15	9	1	41	59	2	11
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:	37	360	16	9	694	15	9	1	41	59	2	11
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:	37	360	16	9	694	15	9	1	41	59	2	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	37	360	16	9	694	15	9	1	41	59	2	11
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	709	xxxx	xxxxx	376	xxxx	xxxxx	975	1170	355	808	1169	188
Potent Cap.:	899	xxxx	xxxxx	1194	xxxx	xxxxx	209	195	648	276	195	828
Move Cap.:	899	xxxx	xxxxx	1194	xxxx	xxxxx	197	185	648	248	185	828
Volume/Cap:	0.04	xxxx	xxxx	0.01	xxxx	xxxx	0.05	0.01	0.06	0.24	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.2	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	446	xxxxx	xxxx	275	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	1.0	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.1	xxxxx	xxxxx	22.7	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			14.1			22.7		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #6 Lundy / Commerce

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R

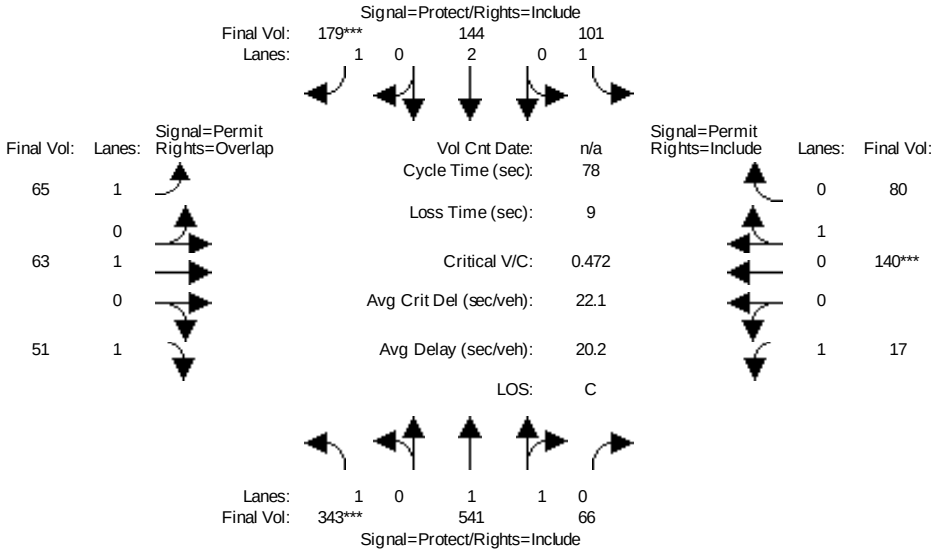
```
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   37  360    16     9  694    15     9    1    41    59    2    11
ApproachDel:    xxxxxx           xxxxxx             14.1             22.7
------------|--------------||--------------||--------------||--------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=51]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1254]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=72]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1254]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #6 Lundy / Commerce
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|--------------||--------------||--------------||--------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   37  360    16     9  694    15     9    1    41    59    2    11
------------|--------------||--------------||--------------||--------------|
Major Street Volume:             1131
Minor Approach Volume:           72
Minor Approach Volume Threshold: 242
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #7: Lundy / McKay

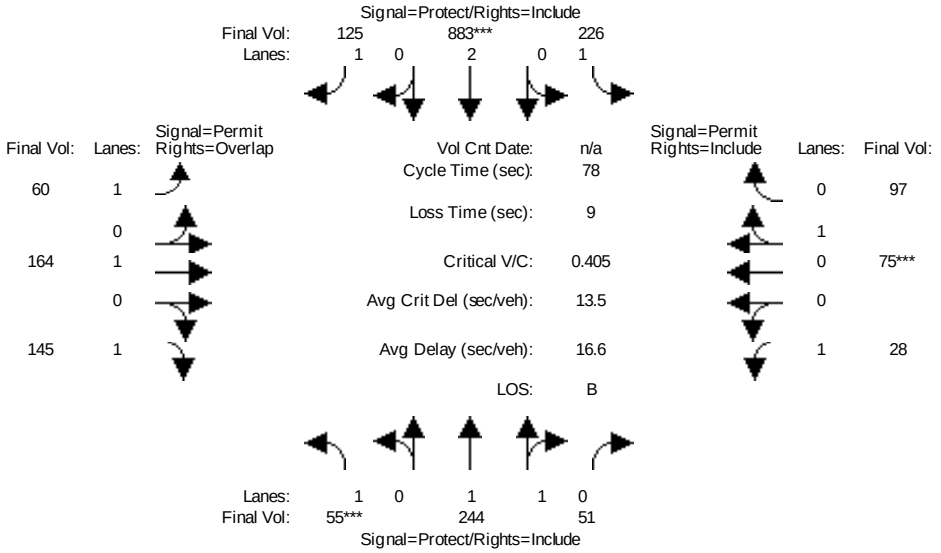


Street Name:	Lundy Ave						McKay Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	343	541	66	101	144	179	65	63	51	17	140	80
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:	343	541	66	101	144	179	65	63	51	17	140	80
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:	343	541	66	101	144	179	65	63	51	17	140	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	343	541	66	101	144	179	65	63	51	17	140	80
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:	343	541	66	101	144	179	65	63	51	17	140	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.77	0.23	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.62	0.38
Final Sat.:	1750	3356	409	1750	3800	1750	1750	1900	1750	1750	1173	670
Capacity Analysis Module:												
Vol/Sat:	0.20	0.16	0.16	0.06	0.04	0.10	0.04	0.03	0.03	0.01	0.12	0.12
Crit Moves:	****					****					****	
Green/Cycle:	0.42	0.41	0.41	0.23	0.22	0.22	0.25	0.25	0.67	0.25	0.25	0.25
Volume/Cap:	0.47	0.40	0.40	0.26	0.17	0.47	0.15	0.13	0.04	0.04	0.47	0.47
Uniform Del:	16.6	16.4	16.4	24.8	24.9	26.7	22.6	22.5	4.4	22.0	24.7	24.7
IncremntDel:	0.5	0.2	0.2	0.3	0.1	0.9	0.2	0.1	0.0	0.0	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.1	16.6	16.6	25.1	25.0	27.6	22.8	22.6	4.4	22.0	25.5	25.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	16.6	16.6	25.1	25.0	27.6	22.8	22.6	4.4	22.0	25.5	25.5
LOS by Move:	B	B	B	C	C	C	C	C	A	C	C	C
HCM2k95thQ:	12	10	10	4	3	8	3	2	1	1	10	10

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #7: Lundy / McKay

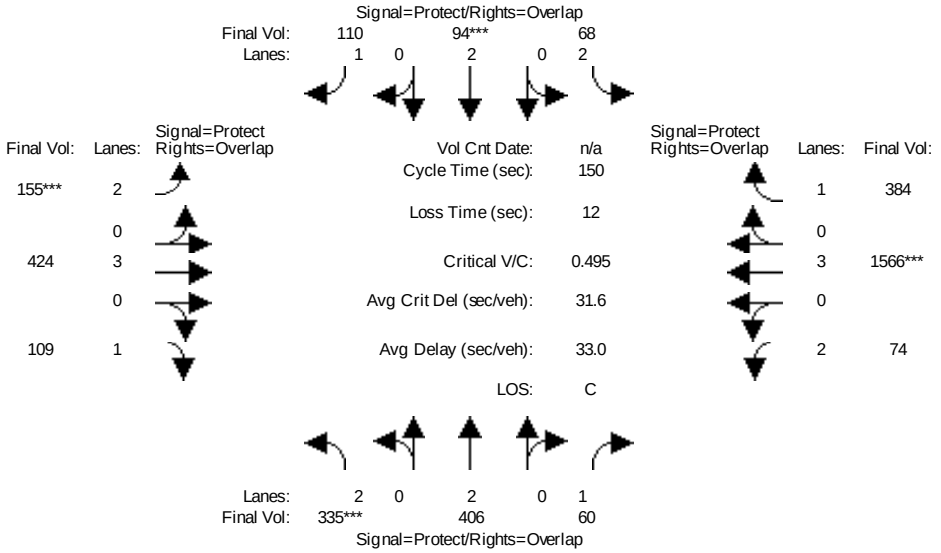


Street Name:	Lundy Ave						McKay Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	55	244	51	226	883	125	60	164	145	28	75	97
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:	55	244	51	226	883	125	60	164	145	28	75	97
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:	55	244	51	226	883	125	60	164	145	28	75	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	244	51	226	883	125	60	164	145	28	75	97
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:	55	244	51	226	883	125	60	164	145	28	75	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.63	0.37	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.42	0.58
Final Sat.:	1750	3097	647	1750	3800	1750	1750	1900	1750	1750	790	1022
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.13	0.23	0.07	0.03	0.09	0.08	0.02	0.09	0.09
Crit Moves:	****				****						****	
Green/Cycle:	0.09	0.33	0.33	0.33	0.56	0.56	0.23	0.23	0.32	0.23	0.23	0.23
Volume/Cap:	0.35	0.24	0.24	0.39	0.41	0.13	0.15	0.37	0.26	0.07	0.41	0.41
Uniform Del:	33.4	19.2	19.2	20.2	9.6	8.0	23.9	25.3	19.6	23.5	25.5	25.5
IncremntDel:	1.4	0.1	0.1	0.4	0.1	0.1	0.2	0.5	0.2	0.1	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.7	19.3	19.3	20.7	9.8	8.0	24.1	25.8	19.9	23.5	26.2	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.7	19.3	19.3	20.7	9.8	8.0	24.1	25.8	19.9	23.5	26.2	26.2
LOS by Move:	C	B	B	C	A	A	C	C	B	C	C	C
HCM2k95thQ:	3	5	5	9	11	3	3	7	6	1	8	8

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #8: Lundy / Murphy

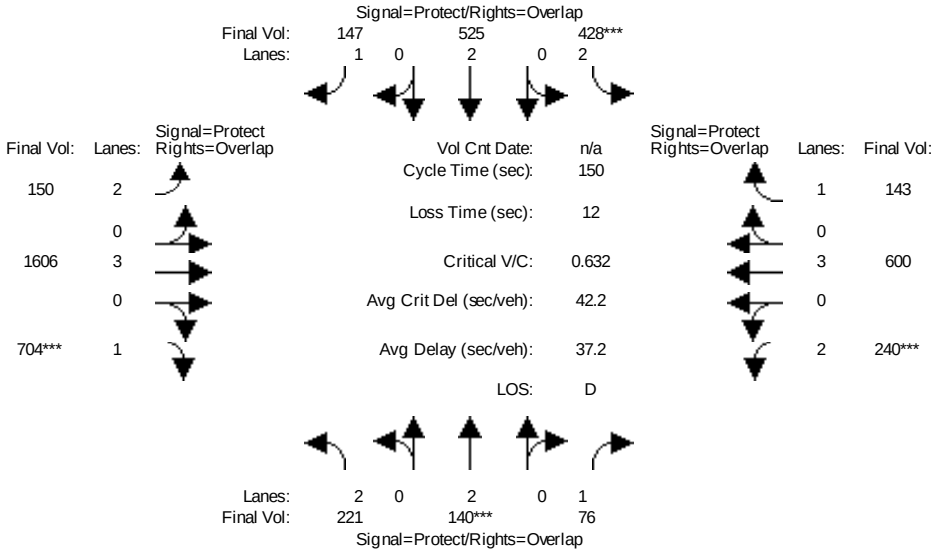


Street Name:	Lundy Ave						Murphy Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	335	406	60	68	94	110	155	424	109	74	1566	384
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	335	406	60	68	94	110	155	424	109	74	1566	384
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:	335	406	60	68	94	110	155	424	109	74	1566	384
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	335	406	60	68	94	110	155	424	109	74	1566	384
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:	335	406	60	68	94	110	155	424	109	74	1566	384
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.03	0.02	0.02	0.06	0.05	0.07	0.06	0.02	0.27	0.22
Crit Moves:	****				****		****				****	
Green/Cycle:	0.21	0.19	0.44	0.08	0.07	0.16	0.10	0.39	0.61	0.25	0.54	0.63
Volume/Cap:	0.50	0.55	0.08	0.26	0.37	0.38	0.50	0.19	0.10	0.09	0.50	0.35
Uniform Del:	52.3	54.7	24.3	64.3	67.0	55.9	64.2	29.7	12.4	43.5	21.4	13.2
IncremntDel:	0.6	0.9	0.0	0.5	0.9	0.9	1.3	0.0	0.0	0.1	0.1	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.9	55.6	24.3	64.8	67.9	56.8	65.6	29.7	12.5	43.5	21.6	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.9	55.6	24.3	64.8	67.9	56.8	65.6	29.7	12.5	43.5	21.6	13.4
LOS by Move:	D	E	C	E	E	E	E	C	B	D	C	B
HCM2k95thQ:	16	16	3	3	4	9	9	8	4	3	26	16

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #8: Lundy / Murphy

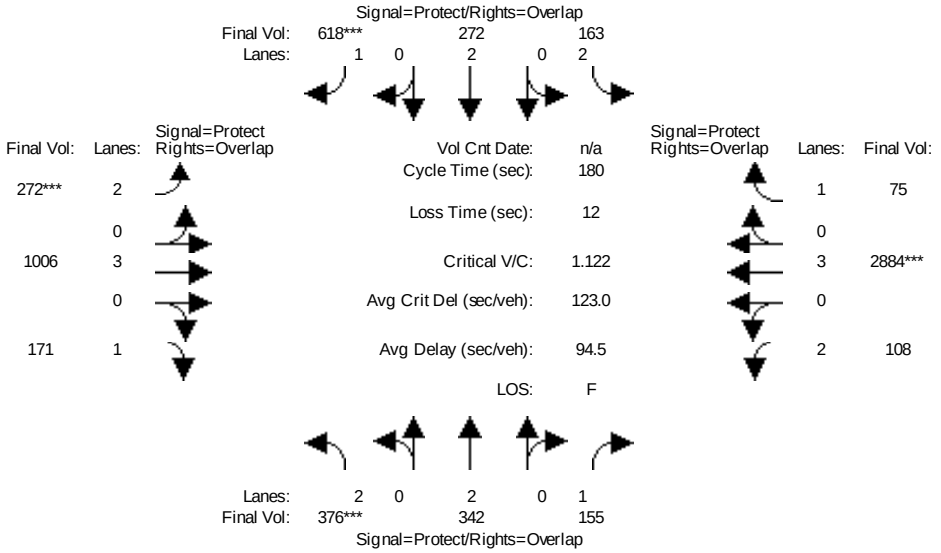


Street Name:	Lundy Ave						Murphy Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	221	140	76	428	525	147	150	1606	704	240	600	143
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:	221	140	76	428	525	147	150	1606	704	240	600	143
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:	221	140	76	428	525	147	150	1606	704	240	600	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	140	76	428	525	147	150	1606	704	240	600	143
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:	221	140	76	428	525	147	150	1606	704	240	600	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.04	0.14	0.14	0.08	0.05	0.28	0.40	0.08	0.11	0.08
Crit Moves:		****		****					****	****		
Green/Cycle:	0.09	0.07	0.19	0.21	0.19	0.38	0.20	0.52	0.62	0.12	0.44	0.65
Volume/Cap:	0.74	0.55	0.23	0.64	0.74	0.22	0.24	0.54	0.65	0.64	0.24	0.12
Uniform Del:	66.2	67.8	51.9	53.7	57.7	31.0	50.5	24.0	18.6	62.9	26.2	9.8
IncremntDel:	9.8	2.6	0.4	2.1	4.3	0.2	0.2	0.2	1.5	3.6	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	76.0	70.5	52.3	55.8	62.1	31.1	50.7	24.2	20.1	66.6	26.3	9.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.0	70.5	52.3	55.8	62.1	31.1	50.7	24.2	20.1	66.6	26.3	9.8
LOS by Move:	E	E	D	E	E	C	D	C	C	E	C	A
HCM2k95thQ:	14	8	6	19	21	9	7	28	37	14	11	5

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #9: Montague / Oakland

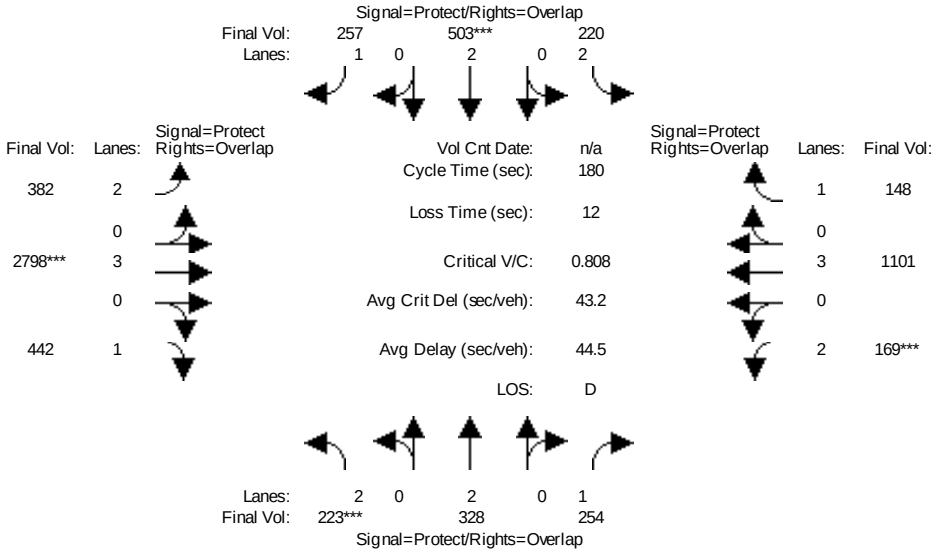


Street Name:	Oakland Rd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	376	342	155	163	272	618	272	1006	171	108	2884	75
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:	376	342	155	163	272	618	272	1006	171	108	2884	75
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:	376	342	155	163	272	618	272	1006	171	108	2884	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	376	342	155	163	272	618	272	1006	171	108	2884	75
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:	376	342	155	163	272	618	272	1006	171	108	2884	75
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2992	3800	1488	2992	3800	1488	2992	5700	1488	2992	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.10	0.05	0.07	0.42	0.09	0.18	0.11	0.04	0.51	0.05
Crit Moves:	****					****	****				****	
Green/Cycle:	0.11	0.25	0.35	0.15	0.29	0.37	0.08	0.44	0.55	0.10	0.45	0.60
Volume/Cap:	1.12	0.36	0.30	0.36	0.25	1.12	1.12	0.40	0.21	0.38	1.12	0.08
Uniform Del:	79.9	55.6	43.0	68.6	49.0	56.7	82.7	34.8	20.8	76.3	49.4	15.0
IncremntDel:	86.3	0.2	0.3	0.5	0.1	76.4	94.5	0.1	0.1	0.8	60.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	166.2	55.9	43.3	69.1	49.1	133.1	177.2	34.9	20.9	77.1	110	15.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	166.2	55.9	43.3	69.1	49.1	133.1	177.2	34.9	20.9	77.1	110	15.0
LOS by Move:	F	E	D	E	D	F	F	C	C	E	F	B
HCM2k95thQ:	32	14	13	10	11	74	25	22	10	6	98	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #9: Montague / Oakland

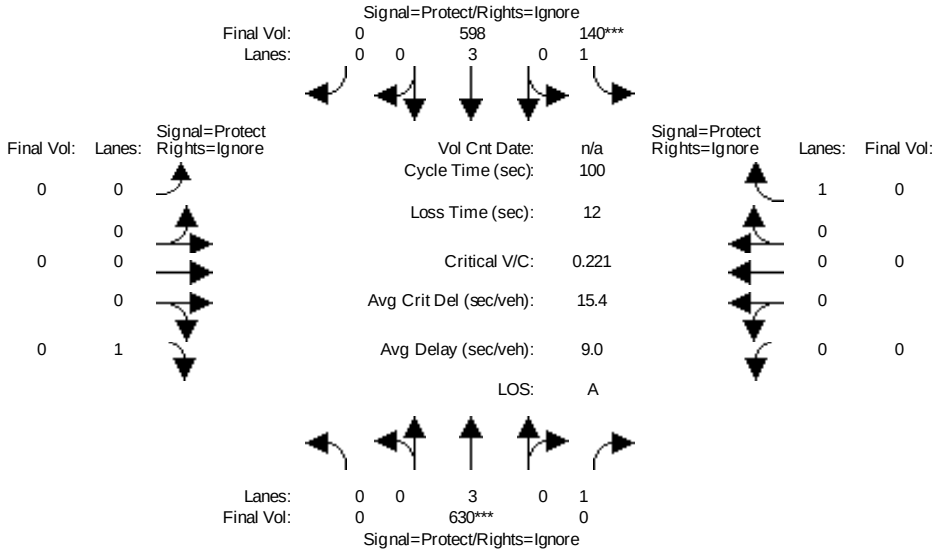


Street Name:	Oakland Rd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	223	328	254	220	503	257	382	2798	442	169	1101	148
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:	223	328	254	220	503	257	382	2798	442	169	1101	148
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:	223	328	254	220	503	257	382	2798	442	169	1101	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	328	254	220	503	257	382	2798	442	169	1101	148
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:	223	328	254	220	503	257	382	2798	442	169	1101	148
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2992	3800	1488	2992	3800	1488	2992	5700	1488	2992	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.07	0.09	0.17	0.07	0.13	0.17	0.13	0.49	0.30	0.06	0.19	0.10
Crit Moves:	****				****			****			****	
Green/Cycle:	0.09	0.16	0.23	0.10	0.16	0.43	0.27	0.61	0.70	0.07	0.41	0.51
Volume/Cap:	0.81	0.55	0.76	0.73	0.81	0.40	0.47	0.81	0.42	0.81	0.47	0.20
Uniform Del:	80.1	70.2	65.1	78.6	72.5	34.9	55.1	27.2	11.6	82.5	39.1	24.2
IncremntDel:	16.1	1.2	9.5	9.0	7.7	0.4	0.4	1.5	0.3	20.3	0.2	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	96.2	71.4	74.6	87.7	80.3	35.3	55.5	28.7	11.8	102.9	39.3	24.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	96.2	71.4	74.6	87.7	80.3	35.3	55.5	28.7	11.8	102.9	39.3	24.3
LOS by Move:	F	E	E	F	F	D	E	C	B	F	D	C
HCM2k95thQ:	17	16	27	16	27	19	19	62	20	12	25	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #10: I-880 NB / N Capitol

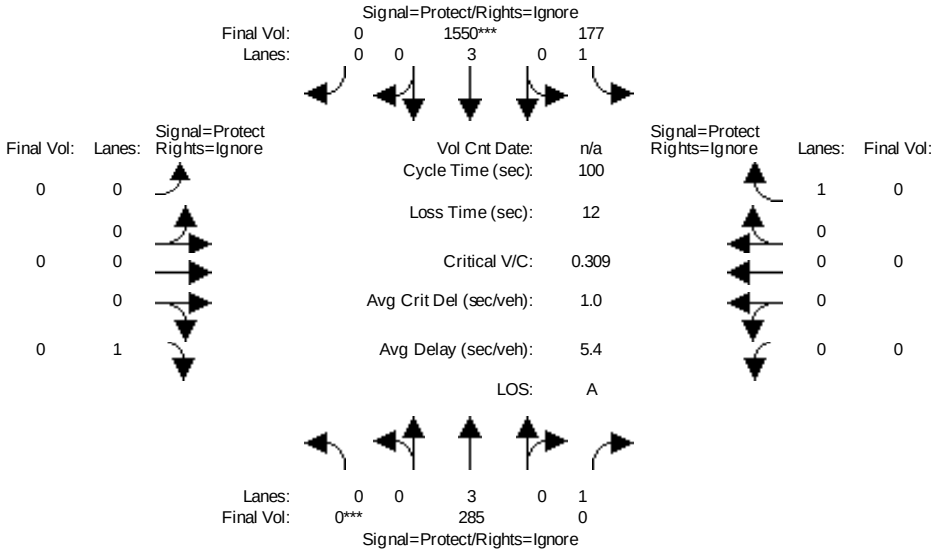


Street Name:	N Capitol Ave						I-880 NB Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	630	615	140	598	0	0	0	0	0	0	578
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	630	615	140	598	0	0	0	0	0	0	578
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	630	0	140	598	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	630	0	140	598	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	630	0	140	598	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.88	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	0	5700	1750	1663	5700	0	0	0	1750	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.00	0.08	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****		****								
Green/Cycle:	0.00	0.50	0.00	0.38	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.22	0.00	0.22	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	14.1	0.0	21.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.1	0.0	21.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.1	0.0	21.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	B	A	C	A	A	A	A	A	A	A	A
HCM2k95thQ:	0	7	0	6	2	0	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #10: I-880 NB / N Capitol

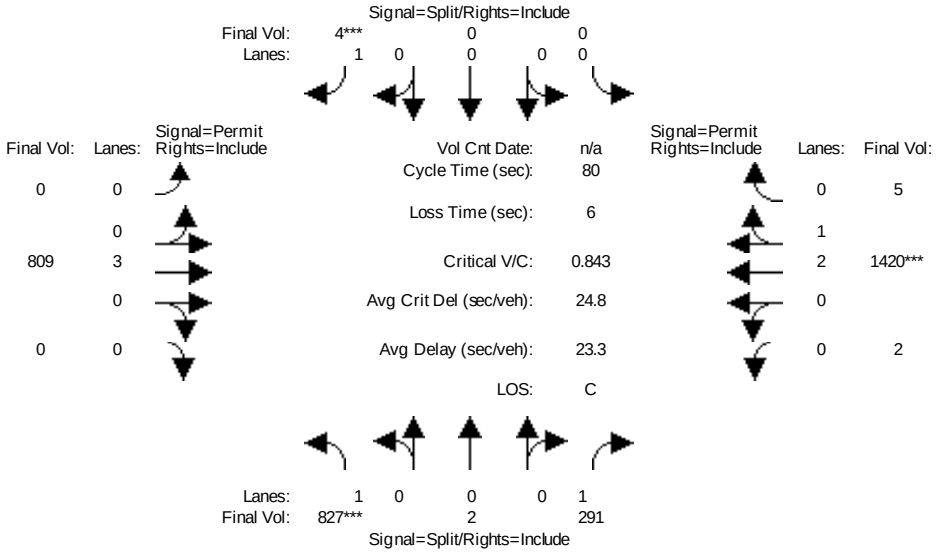


Street Name:	N Capitol Ave						I-880 NB Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	285	443	177	1550	0	0	0	0	0	0	301
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	285	443	177	1550	0	0	0	0	0	0	301
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	285	0	177	1550	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	285	0	177	1550	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	285	0	177	1550	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.88	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	0	5700	1750	1663	5700	0	0	0	1750	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.00	0.11	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****							
Green/Cycle:	0.00	0.28	0.00	0.60	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.18	0.00	0.18	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	27.2	0.0	9.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	27.2	0.0	9.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.2	0.0	9.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	C	A	A	A	A	A	A	A	A	A	A
HCM2k95thQ:	0	4	0	5	6	0	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_AM

Intersection #11: I-880 NB / Hostetter

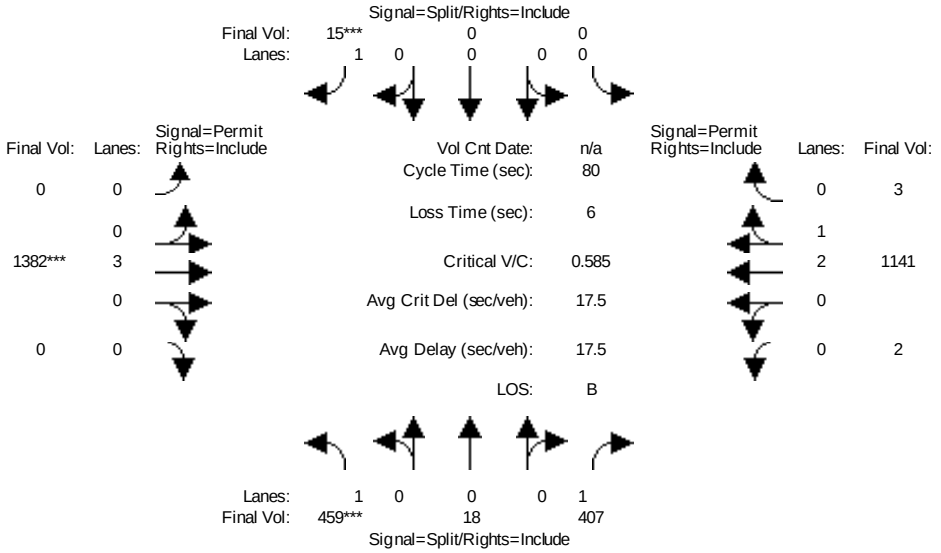


Street Name:	I-880 NB Ramp						Hostetter Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	0	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	827	2	291	0	0	4	0	809	0	2	1420	5
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:	827	2	291	0	0	4	0	809	0	2	1420	5
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:	827	2	291	0	0	4	0	809	0	2	1420	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	827	2	291	0	0	4	0	809	0	2	1420	5
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:	827	2	291	0	0	4	0	809	0	2	1420	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.93	0.85	0.92	1.00	0.80	0.92	1.00	0.92	0.86	0.94	0.86
Lanes:	1.00	0.01	0.99	0.00	0.00	1.00	0.00	3.00	0.00	0.01	2.98	0.01
Final Sat.:	1621	11	1611	0	0	1514	0	5700	0	7	5324	19
Capacity Analysis Module:												
Vol/Sat:	0.51	0.18	0.18	0.00	0.00	0.00	0.00	0.14	0.00	0.27	0.27	0.27
Crit Moves:	****					****					****	
Green/Cycle:	0.61	0.61	0.61	0.00	0.00	0.00	0.00	0.32	0.00	0.32	0.32	0.32
Volume/Cap:	0.84	0.30	0.30	0.00	0.00	0.84	0.00	0.45	0.00	0.84	0.84	0.84
Uniform Del:	12.7	7.6	7.6	0.0	0.0	39.9	0.0	21.8	0.0	25.5	25.5	25.5
IncremntDel:	5.1	0.0	0.0	0.0	0.0	294.5	0.0	0.2	0.0	4.0	4.0	4.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	17.8	7.6	7.6	0.0	0.0	334.4	0.0	22.0	0.0	29.5	29.5	29.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.8	7.6	7.6	0.0	0.0	334.4	0.0	22.0	0.0	29.5	29.5	29.5
LOS by Move:	B	A	A	A	A	F	A	C	A	C	C	C
HCM2k95thQ:	35	8	8	0	0	2	0	11	0	25	25	25

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
EX_PM

Intersection #11: I-880 NB / Hostetter

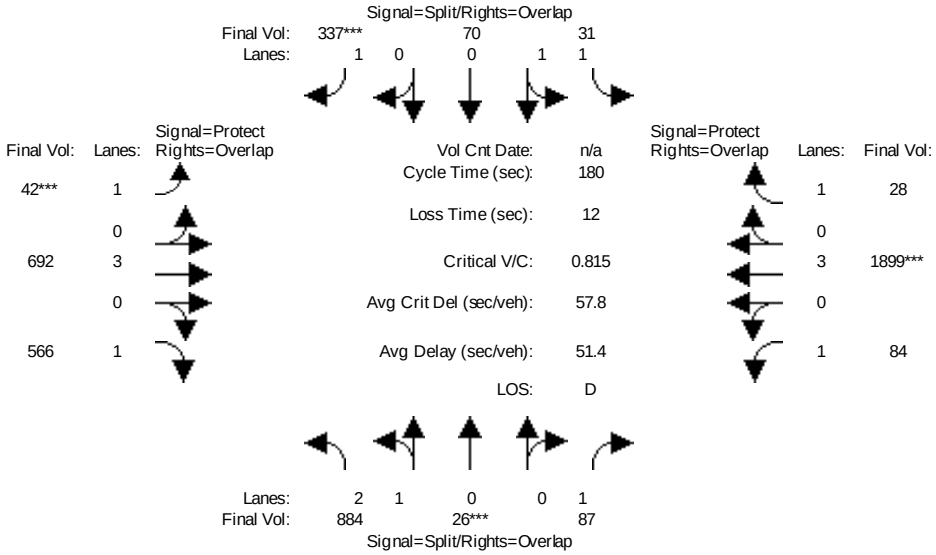


Street Name:	I-880 NB Ramp						Hostetter Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	0	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	459	18	407	0	0	15	0	1382	0	2	1141	3
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:	459	18	407	0	0	15	0	1382	0	2	1141	3
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:	459	18	407	0	0	15	0	1382	0	2	1141	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	18	407	0	0	15	0	1382	0	2	1141	3
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:	459	18	407	0	0	15	0	1382	0	2	1141	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.91	0.84	0.92	1.00	0.80	0.92	1.00	0.92	0.86	0.94	0.86
Lanes:	1.00	0.04	0.96	0.00	0.00	1.00	0.00	3.00	0.00	0.01	2.98	0.01
Final Sat.:	1589	68	1526	0	0	1514	0	5700	0	9	5316	14
Capacity Analysis Module:												
Vol/Sat:	0.29	0.27	0.27	0.00	0.00	0.01	0.00	0.24	0.00	0.21	0.21	0.21
Crit Moves:	****					****		****				
Green/Cycle:	0.49	0.49	0.49	0.00	0.00	0.02	0.00	0.41	0.00	0.41	0.41	0.41
Volume/Cap:	0.59	0.54	0.54	0.00	0.00	0.59	0.00	0.59	0.00	0.52	0.52	0.52
Uniform Del:	14.4	14.0	14.0	0.0	0.0	39.0	0.0	18.1	0.0	17.5	17.5	17.5
IncremntDel:	0.6	0.4	0.4	0.0	0.0	30.4	0.0	0.4	0.0	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	15.0	14.3	14.3	0.0	0.0	69.4	0.0	18.5	0.0	17.7	17.7	17.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.0	14.3	14.3	0.0	0.0	69.4	0.0	18.5	0.0	17.7	17.7	17.7
LOS by Move:	B	B	B	A	A	E	A	B	A	B	B	B
HCM2k95thQ:	17	15	15	0	0	3	0	17	0	14	14	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #1: Montague / Trade Zone

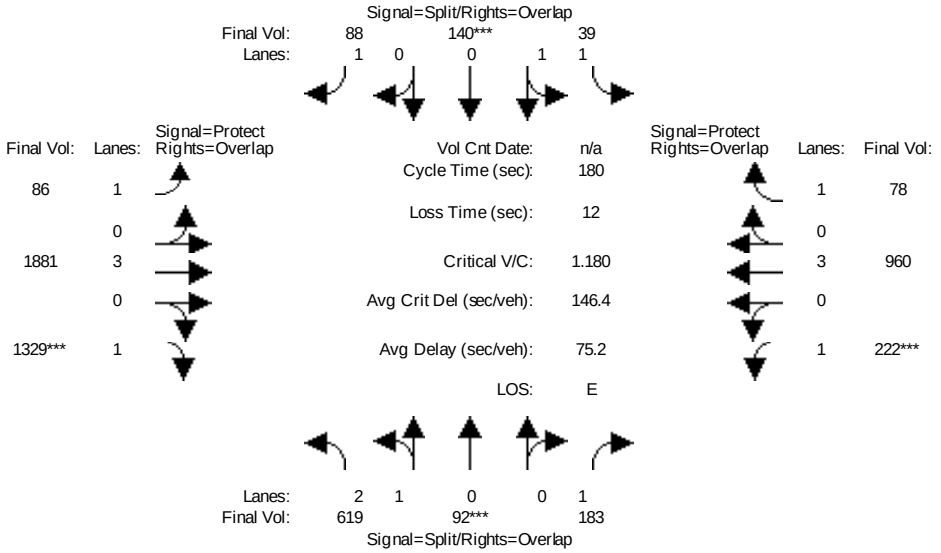


Street Name:	Trade Zone Blvd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	884	26	87	31	70	337	42	692	566	84	1899	28
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:	884	26	87	31	70	337	42	692	566	84	1899	28
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:	884	26	87	31	70	337	42	692	566	84	1899	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	884	26	87	31	70	337	42	692	566	84	1899	28
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:	884	26	87	31	70	337	42	692	566	84	1899	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.95	0.78	0.91	0.99	0.78	0.88	1.00	0.78	0.88	1.00	0.78
Lanes:	2.93	0.07	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	4400	129	1488	1724	1872	1488	1663	5700	1488	1663	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.06	0.02	0.04	0.23	0.03	0.12	0.38	0.05	0.33	0.02
Crit Moves:		****				****	****				****	
Green/Cycle:	0.25	0.25	0.35	0.23	0.23	0.27	0.04	0.35	0.60	0.10	0.41	0.65
Volume/Cap:	0.81	0.81	0.17	0.08	0.16	0.83	0.65	0.34	0.63	0.51	0.81	0.03
Uniform Del:	63.5	63.5	40.6	54.0	55.1	61.8	85.3	42.9	23.1	76.9	46.5	11.5
IncremntDel:	4.4	4.4	0.2	0.0	0.1	13.9	20.9	0.1	1.5	2.6	2.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.9	67.9	40.8	54.0	55.2	75.7	106.2	43.0	24.5	79.6	48.7	11.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.9	67.9	40.8	54.0	55.2	75.7	106.2	43.0	24.5	79.6	48.7	11.5
LOS by Move:	E	E	D	D	E	E	F	D	C	E	D	B
HCM2k95thQ:	34	34	7	3	6	35	5	17	36	10	50	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #1: Montague / Trade Zone

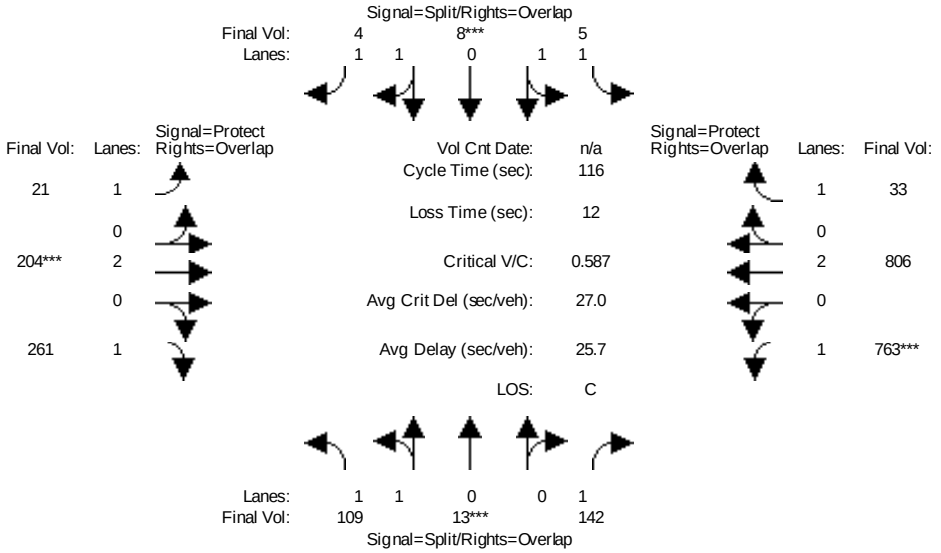


Street Name:	Trade Zone Blvd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	619	92	183	39	140	88	86	1881	1329	222	960	78
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:	619	92	183	39	140	88	86	1881	1329	222	960	78
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:	619	92	183	39	140	88	86	1881	1329	222	960	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	619	92	183	39	140	88	86	1881	1329	222	960	78
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:	619	92	183	39	140	88	86	1881	1329	222	960	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.96	0.78	0.91	0.99	0.78	0.88	1.00	0.78	0.88	1.00	0.78
Lanes:	2.67	0.33	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	4030	599	1488	1731	1879	1488	1663	5700	1488	1663	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.12	0.02	0.07	0.06	0.05	0.33	0.89	0.13	0.17	0.05
Crit Moves:		****			****				****	****		
Green/Cycle:	0.13	0.13	0.24	0.06	0.06	0.24	0.17	0.63	0.76	0.11	0.57	0.63
Volume/Cap:	1.18	1.18	0.51	0.36	1.18	0.25	0.30	0.53	1.18	1.18	0.30	0.08
Uniform Del:	78.3	78.3	58.8	80.8	84.3	55.7	64.8	18.7	21.9	79.8	20.4	13.1
IncremntDel:	97.4	97.4	1.2	0.4	130	0.4	0.6	0.1	90.5	122.5	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	175.7	176	59.9	81.3	214	56.1	65.4	18.8	112.3	202.4	20.4	13.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	175.7	176	59.9	81.3	214	56.1	65.4	18.8	112.3	202.4	20.4	13.1
LOS by Move:	F	F	E	F	F	E	E	B	F	F	C	B
HCM2k95thQ:	39	39	18	5	23	8	8	31	153	34	16	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #2: Trade Zone / Lundy

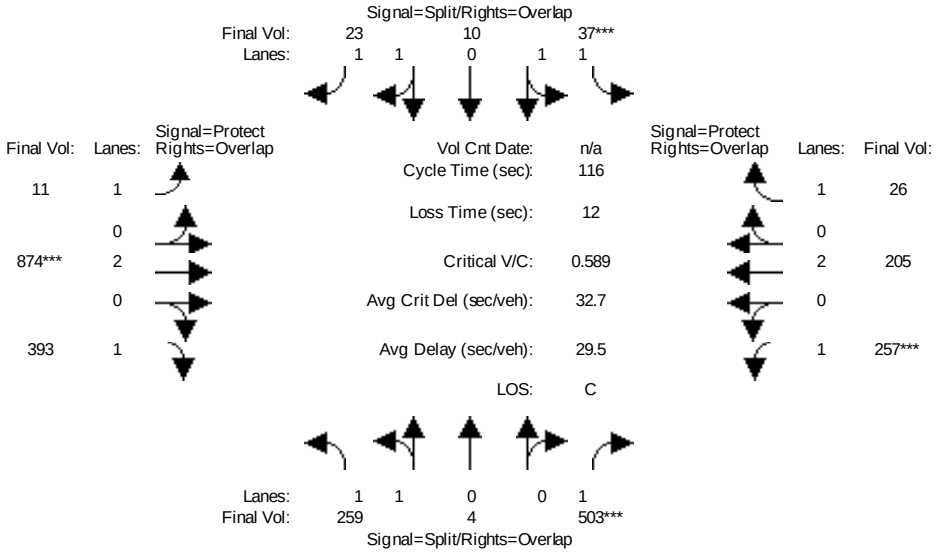


Street Name:	Lundy Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	109	13	142	5	8	4	21	204	261	763	806	33
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:	109	13	142	5	8	4	21	204	261	763	806	33
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:	109	13	142	5	8	4	21	204	261	763	806	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	13	142	5	8	4	21	204	261	763	806	33
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:	109	13	142	5	8	4	21	204	261	763	806	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.80	0.20	1.00	1.21	1.79	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3154	376	1750	2122	3396	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.08	0.00	0.00	0.00	0.01	0.05	0.15	0.44	0.21	0.02
Crit Moves:		****			****			****			****	
Green/Cycle:	0.09	0.09	0.72	0.09	0.09	0.25	0.16	0.09	0.17	0.64	0.56	0.65
Volume/Cap:	0.40	0.40	0.11	0.03	0.03	0.01	0.07	0.62	0.87	0.68	0.38	0.03
Uniform Del:	50.2	50.2	4.8	48.5	48.5	33.0	41.4	51.2	46.7	13.5	14.0	7.2
IncremntDel:	0.9	0.9	0.0	0.0	0.0	0.0	0.1	3.7	22.0	1.8	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.0	51.0	4.8	48.6	48.6	33.0	41.5	54.9	68.7	15.2	14.1	7.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.0	51.0	4.8	48.6	48.6	33.0	41.5	54.9	68.7	15.2	14.1	7.3
LOS by Move:	D	D	A	D	D	C	D	D	E	B	B	A
HCM2k95thQ:	4	4	3	0	0	0	1	9	23	32	14	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #2: Trade Zone / Lundy

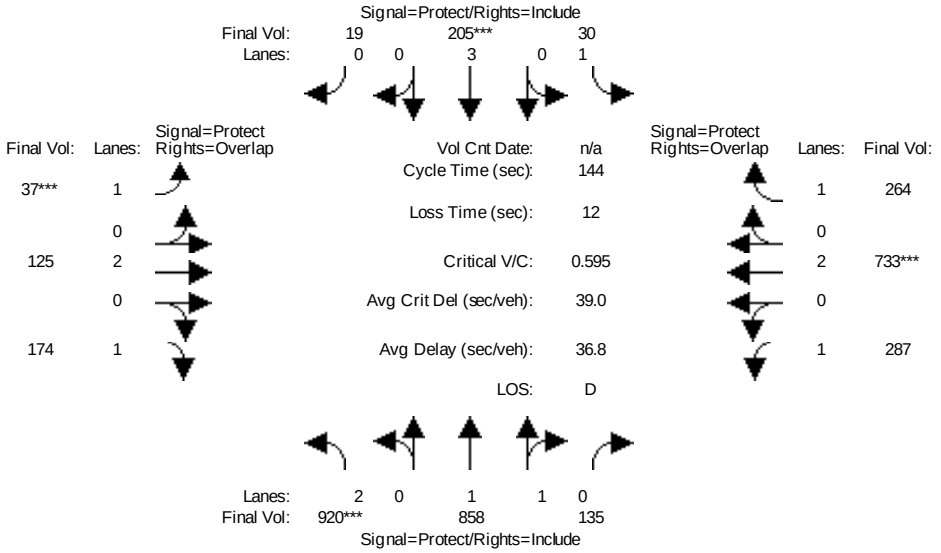


Street Name:	Lundy Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	259	4	503	37	10	23	11	874	393	257	205	26
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:	259	4	503	37	10	23	11	874	393	257	205	26
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:	259	4	503	37	10	23	11	874	393	257	205	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	259	4	503	37	10	23	11	874	393	257	205	26
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:	259	4	503	37	10	23	11	874	393	257	205	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.97	0.03	1.00	2.00	0.57	1.43	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3451	53	1750	3500	1087	2499	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.29	0.01	0.01	0.01	0.01	0.23	0.22	0.15	0.05	0.01
Crit Moves:			****	****				****		****		
Green/Cycle:	0.22	0.22	0.45	0.09	0.09	0.33	0.24	0.36	0.58	0.23	0.35	0.43
Volume/Cap:	0.34	0.34	0.64	0.12	0.11	0.03	0.03	0.64	0.39	0.64	0.16	0.03
Uniform Del:	38.1	38.1	24.6	48.9	48.9	26.3	33.4	30.8	13.2	40.3	26.1	18.9
IncremntDel:	0.3	0.3	1.8	0.1	0.1	0.0	0.0	1.0	0.2	3.4	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	38.4	26.4	49.0	49.0	26.3	33.5	31.9	13.4	43.7	26.2	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	38.4	26.4	49.0	49.0	26.3	33.5	31.9	13.4	43.7	26.2	18.9
LOS by Move:	D	D	C	D	D	C	C	C	B	D	C	B
HCM2k95thQ:	8	8	26	2	1	1	1	24	15	17	5	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #3: Trade Zone / N Capitol

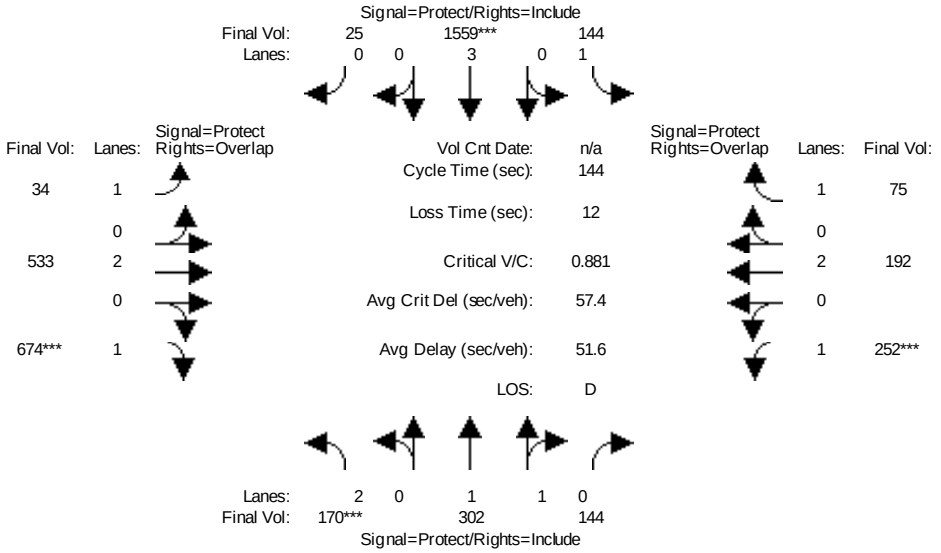


Street Name:	N Capitol Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	920	858	135	30	205	19	37	125	174	287	733	264
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:	920	858	135	30	205	19	37	125	174	287	733	264
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:	920	858	135	30	205	19	37	125	174	287	733	264
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	920	858	135	30	205	19	37	125	174	287	733	264
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:	920	858	135	30	205	19	37	125	174	287	733	264
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.71	0.29	1.00	2.73	0.27	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	3246	511	1750	5179	480	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.29	0.26	0.26	0.02	0.04	0.04	0.02	0.03	0.10	0.16	0.19	0.15
Crit Moves:	****				****		****				****	
Green/Cycle:	0.48	0.44	0.44	0.11	0.07	0.07	0.05	0.11	0.59	0.26	0.32	0.43
Volume/Cap:	0.61	0.61	0.61	0.15	0.57	0.57	0.43	0.30	0.17	0.64	0.61	0.35
Uniform Del:	27.4	31.1	31.1	57.4	64.9	64.9	66.6	59.1	13.4	47.5	41.5	27.3
IncremntDel:	0.7	0.7	0.7	0.3	2.0	2.0	3.5	0.4	0.1	3.0	0.9	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.1	31.8	31.8	57.8	66.9	66.9	70.1	59.5	13.5	50.5	42.4	27.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.1	31.8	31.8	57.8	66.9	66.9	70.1	59.5	13.5	50.5	42.4	27.6
LOS by Move:	C	C	C	E	E	E	E	E	B	D	D	C
HCM2k95thQ:	31	29	29	3	8	8	3	5	7	23	25	15

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #3: Trade Zone / N Capitol

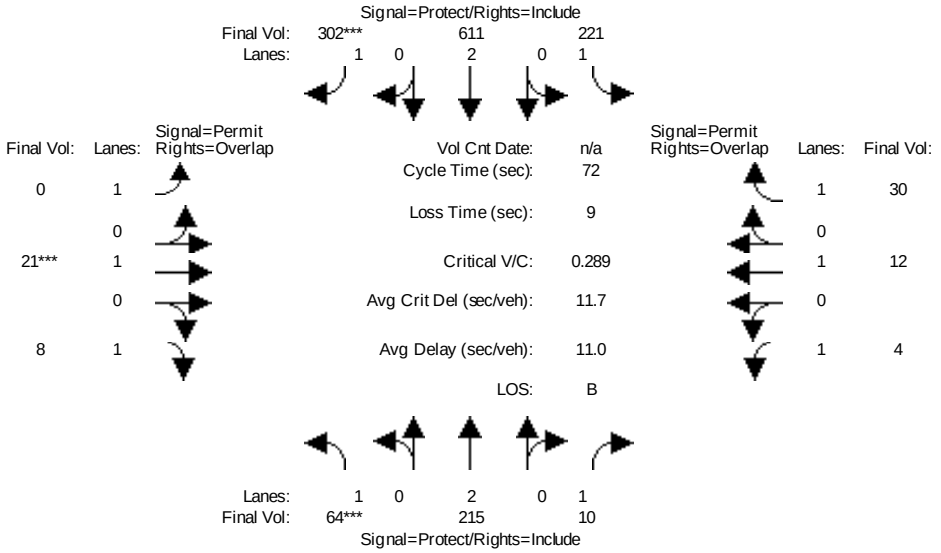


Street Name:	N Capitol Ave						Trade Zone Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	170	302	144	144	1559	25	34	533	674	252	192	75
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:	170	302	144	144	1559	25	34	533	674	252	192	75
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:	170	302	144	144	1559	25	34	533	674	252	192	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	302	144	144	1559	25	34	533	674	252	192	75
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:	170	302	144	144	1559	25	34	533	674	252	192	75
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.32	0.68	1.00	2.95	0.05	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	2504	1194	1750	5602	90	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.12	0.12	0.08	0.28	0.28	0.02	0.14	0.39	0.14	0.05	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.06	0.22	0.22	0.15	0.32	0.32	0.22	0.38	0.44	0.16	0.32	0.47
Volume/Cap:	0.88	0.54	0.54	0.54	0.88	0.88	0.09	0.37	0.88	0.88	0.16	0.09
Uniform Del:	67.1	49.3	49.3	56.3	46.7	46.7	44.4	32.6	37.1	58.9	35.3	21.1
IncremntDel:	34.1	0.7	0.7	2.2	5.4	5.4	0.1	0.2	11.6	25.5	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	101.2	50.0	50.0	58.5	52.1	52.1	44.5	32.8	48.7	84.4	35.4	21.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	101.2	50.0	50.0	58.5	52.1	52.1	44.5	32.8	48.7	84.4	35.4	21.2
LOS by Move:	F	D	D	E	D	D	D	C	D	F	D	C
HCM2k95thQ:	13	17	17	13	41	41	2	15	49	26	6	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #4: Lundy / Fortune

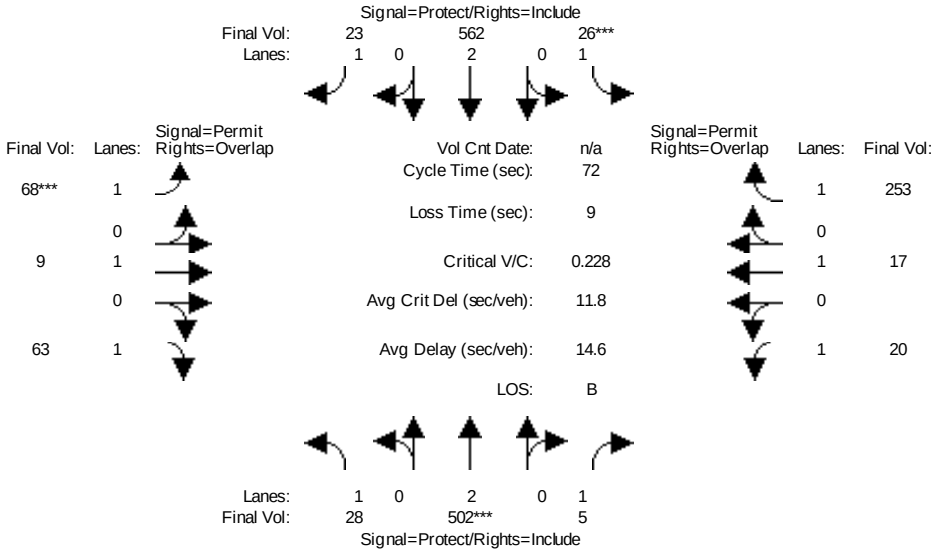


Street Name:	Lundy Ave						Fortune Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	64	215	10	221	611	302	0	21	8	4	12	30
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:	64	215	10	221	611	302	0	21	8	4	12	30
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:	64	215	10	221	611	302	0	21	8	4	12	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	215	10	221	611	302	0	21	8	4	12	30
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:	64	215	10	221	611	302	0	21	8	4	12	30
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.92	1.00	0.78	0.69	1.00	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1750	1900	1488	1314	1900	1488
Capacity Analysis Module:												
Vol/Sat:	0.04	0.06	0.01	0.13	0.16	0.20	0.00	0.01	0.01	0.00	0.01	0.02
Crit Moves:	****					****		****				
Green/Cycle:	0.12	0.37	0.37	0.37	0.62	0.62	0.00	0.14	0.26	0.14	0.14	0.51
Volume/Cap:	0.33	0.15	0.02	0.36	0.26	0.33	0.00	0.08	0.02	0.02	0.05	0.04
Uniform Del:	29.2	15.2	14.5	16.6	6.2	6.6	0.0	27.0	20.0	26.8	26.9	8.9
IncremntDel:	1.0	0.1	0.0	0.4	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.2	15.3	14.5	16.9	6.3	6.8	0.0	27.1	20.0	26.8	26.9	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	15.3	14.5	16.9	6.3	6.8	0.0	27.1	20.0	26.8	26.9	9.0
LOS by Move:	C	B	B	B	A	A	A	C	C	C	C	A
HCM2k95thQ:	3	3	0	7	6	7	0	1	0	0	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #4: Lundy / Fortune

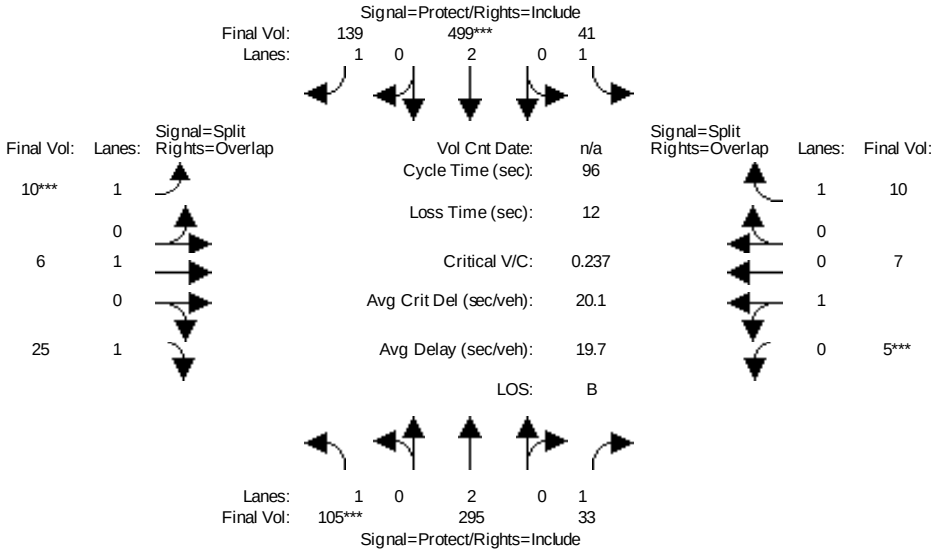


Street Name:	Lundy Ave						Fortune Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	7	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	502	5	26	562	23	68	9	63	20	17	253
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:	28	502	5	26	562	23	68	9	63	20	17	253
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:	28	502	5	26	562	23	68	9	63	20	17	253
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	502	5	26	562	23	68	9	63	20	17	253
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:	28	502	5	26	562	23	68	9	63	20	17	253
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.69	1.00	0.78	0.70	1.00	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1320	1900	1488	1332	1900	1488
Capacity Analysis Module:												
Vol/Sat:	0.02	0.13	0.00	0.02	0.15	0.02	0.05	0.00	0.04	0.02	0.01	0.17
Crit Moves:		****			****			****				
Green/Cycle:	0.27	0.53	0.53	0.14	0.40	0.40	0.21	0.21	0.47	0.21	0.21	0.35
Volume/Cap:	0.06	0.25	0.01	0.11	0.37	0.04	0.25	0.02	0.09	0.07	0.04	0.49
Uniform Del:	19.8	9.2	8.0	27.1	15.0	13.0	23.9	22.8	10.5	23.0	22.9	18.6
IncremntDel:	0.1	0.1	0.0	0.2	0.1	0.0	0.5	0.0	0.1	0.1	0.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.8	9.2	8.0	27.3	15.2	13.0	24.4	22.8	10.5	23.1	22.9	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.8	9.2	8.0	27.3	15.2	13.0	24.4	22.8	10.5	23.1	22.9	19.3
LOS by Move:	B	A	A	C	B	B	C	C	B	C	C	B
HCM2k95thQ:	1	6	0	1	8	1	3	0	2	1	1	10

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #5: Lundy / Concourse

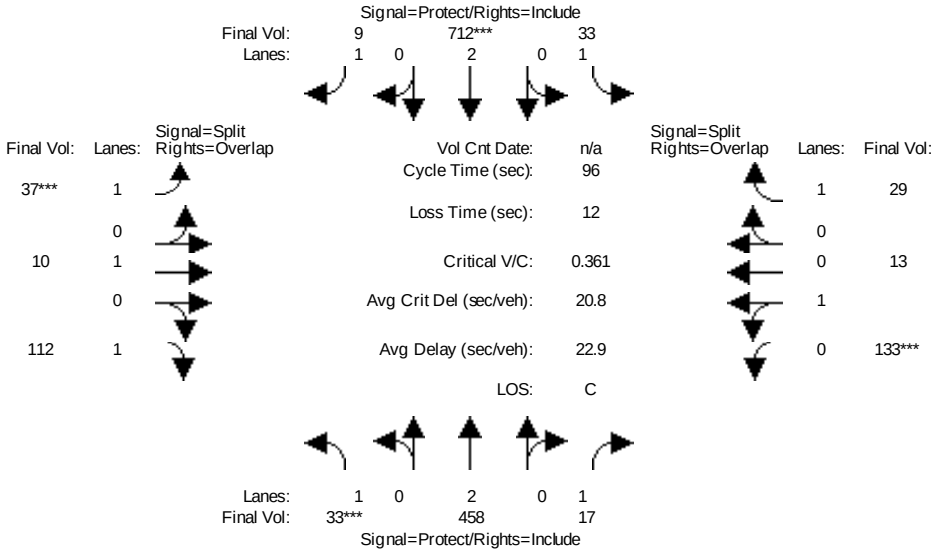


Street Name:	Lundy Ave						Concourse Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	105	295	33	41	499	139	10	6	25	5	7	10
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:	105	295	33	41	499	139	10	6	25	5	7	10
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:	105	295	33	41	499	139	10	6	25	5	7	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	295	33	41	499	139	10	6	25	5	7	10
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:	105	295	33	41	499	139	10	6	25	5	7	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.88	1.00	0.78	0.90	0.98	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	0.44	0.56	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1663	1900	1488	749	1049	1488
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.02	0.02	0.13	0.09	0.01	0.00	0.02	0.01	0.01	0.01
Crit Moves:	****				****		****			****		
Green/Cycle:	0.22	0.39	0.39	0.27	0.45	0.45	0.10	0.10	0.32	0.10	0.10	0.38
Volume/Cap:	0.29	0.20	0.06	0.09	0.29	0.21	0.06	0.03	0.05	0.06	0.06	0.02
Uniform Del:	31.5	19.2	18.1	25.9	16.7	16.0	38.8	38.6	22.5	38.8	38.8	18.7
IncremntDel:	0.5	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.9	19.3	18.2	26.0	16.8	16.2	38.9	38.7	22.6	38.9	38.9	18.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.9	19.3	18.2	26.0	16.8	16.2	38.9	38.7	22.6	38.9	38.9	18.7
LOS by Move:	C	B	B	C	B	B	D	D	C	D	D	B
HCM2k95thQ:	5	5	1	2	9	5	1	0	1	1	1	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #5: Lundy / Concourse

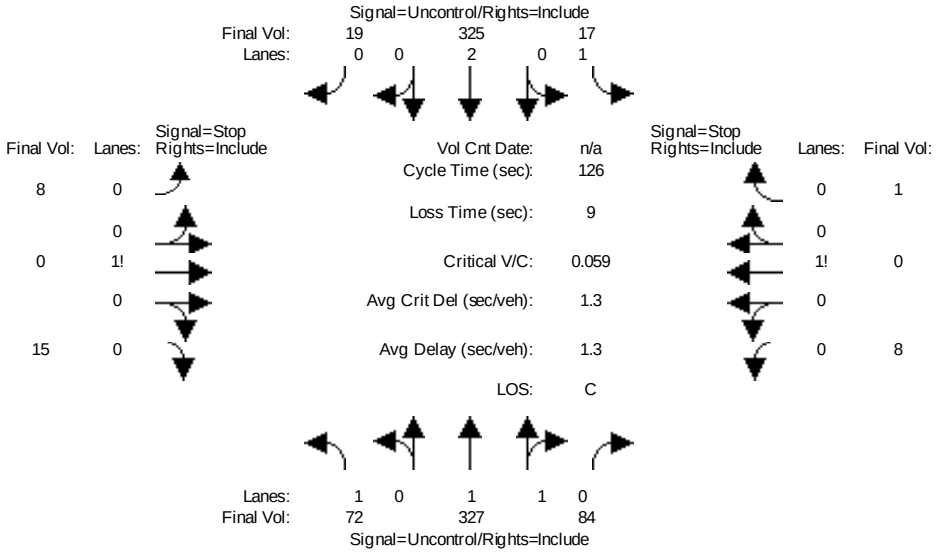


Street Name:	Lundy Ave						Concourse Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	33	458	17	33	712	9	37	10	112	133	13	29
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:	33	458	17	33	712	9	37	10	112	133	13	29
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:	33	458	17	33	712	9	37	10	112	133	13	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	458	17	33	712	9	37	10	112	133	13	29
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:	33	458	17	33	712	9	37	10	112	133	13	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.78	0.88	1.00	0.78	0.88	1.00	0.78	0.88	0.96	0.78
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	0.92	0.08	1.00
Final Sat.:	1663	3800	1488	1663	3800	1488	1663	1900	1488	1535	150	1488
Capacity Analysis Module:												
Vol/Sat:	0.02	0.12	0.01	0.02	0.19	0.01	0.02	0.01	0.08	0.09	0.09	0.02
Crit Moves:	****				****		****			****		
Green/Cycle:	0.07	0.34	0.34	0.21	0.48	0.48	0.10	0.10	0.18	0.22	0.22	0.43
Volume/Cap:	0.27	0.35	0.03	0.10	0.39	0.01	0.21	0.05	0.43	0.39	0.39	0.05
Uniform Del:	42.1	23.6	21.0	30.8	16.1	13.2	39.4	38.7	35.2	31.9	31.9	16.0
IncremntDel:	1.2	0.2	0.0	0.1	0.1	0.0	0.6	0.1	1.1	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.3	23.7	21.0	30.9	16.3	13.2	40.0	38.8	36.3	32.6	32.6	16.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.3	23.7	21.0	30.9	16.3	13.2	40.0	38.8	36.3	32.6	32.6	16.0
LOS by Move:	D	C	C	C	B	B	D	D	D	C	C	B
HCM2k95thQ:	2	10	1	2	12	0	3	1	7	8	8	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
BG_AM

Intersection #6: Lundy / Commerce



Street Name:	Lundy Ave						Commerce Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	72	327	84	17	325	19	8	0	15	8	0	1
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:	72	327	84	17	325	19	8	0	15	8	0	1
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:	72	327	84	17	325	19	8	0	15	8	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	72	327	84	17	325	19	8	0	15	8	0	1
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	344	xxxx	xxxxx	411	xxxx	xxxxx	676	924	172	710	891	206
Potent Cap.:	1226	xxxx	xxxxx	1159	xxxx	xxxxx	343	272	848	325	284	807
Move Cap.:	1226	xxxx	xxxxx	1159	xxxx	xxxxx	324	252	848	301	263	807
Volume/Cap:	0.06	xxxx	xxxx	0.01	xxxx	xxxx	0.02	0.00	0.02	0.03	0.00	0.00
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	542	xxxxx	xxxx	324	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.9	xxxxx	xxxxx	16.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.9			16.4		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #6 Lundy / Commerce

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R

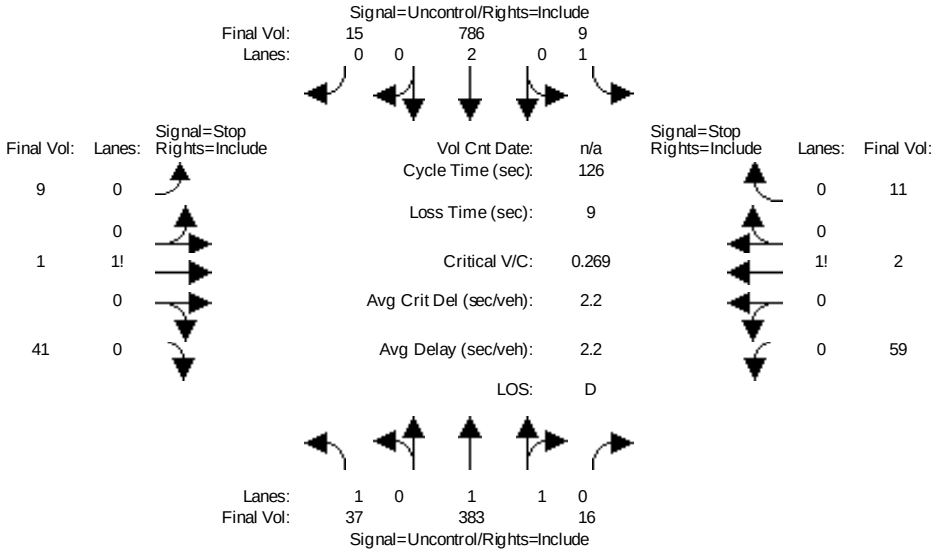
```
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   72  327    84    17  325    19     8    0    15     8    0     1
ApproachDel:    xxxxxx           xxxxxx             11.9             16.4
------------|--------------||--------------||--------------||--------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=876]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=9]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=876]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #6 Lundy / Commerce
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|--------------||--------------||--------------||--------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   72  327    84    17  325    19     8    0    15     8    0     1
------------|--------------||--------------||--------------||--------------|
Major Street Volume:             844
Minor Approach Volume:           23
Minor Approach Volume Threshold: 343
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
BG_PM

Intersection #6: Lundy / Commerce



Street Name:	Lundy Ave						Commerce Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	37	383	16	9	786	15	9	1	41	59	2	11
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:	37	383	16	9	786	15	9	1	41	59	2	11
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:	37	383	16	9	786	15	9	1	41	59	2	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	37	383	16	9	786	15	9	1	41	59	2	11
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	801	xxxx	xxxxx	399	xxxx	xxxxx	1078	1285	401	877	1284	200
Potent Cap.:	831	xxxx	xxxxx	1171	xxxx	xxxxx	176	166	605	246	166	814
Move Cap.:	831	xxxx	xxxxx	1171	xxxx	xxxxx	165	158	605	219	158	814
Volume/Cap:	0.04	xxxx	xxxx	0.01	xxxx	xxxx	0.05	0.01	0.07	0.27	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.5	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	396	xxxxx	xxxx	244	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	1.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.4	xxxxx	xxxxx	25.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			15.4			25.8		
ApproachLOS:	*			*			C			D		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #6 Lundy / Commerce

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R

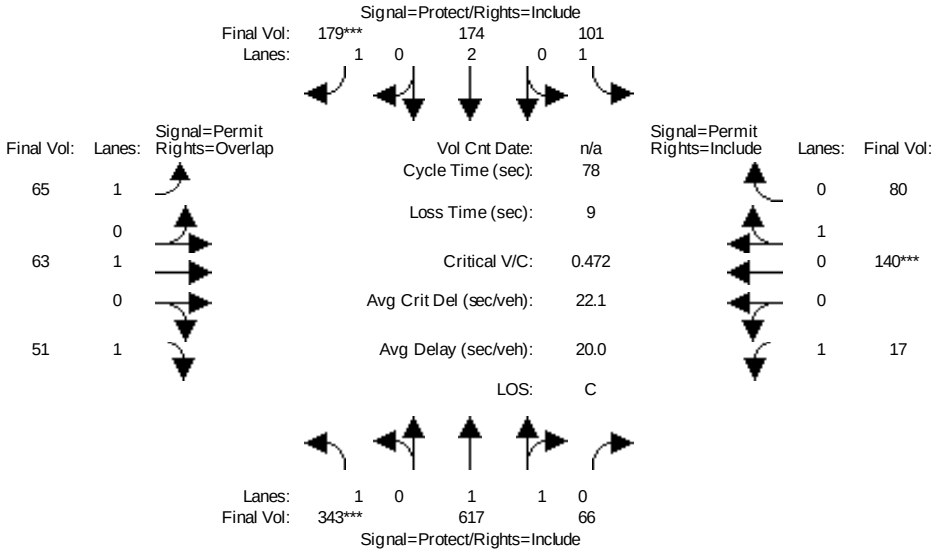
```
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   37  383    16     9  786    15     9    1    41    59    2    11
ApproachDel:    xxxxxx           xxxxxx             15.4             25.8
------------|--------------||--------------||--------------||--------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=51]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1369]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=72]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1369]
   SUCCEED - Total volume greater than or equal to 800 for intersection
             with four or more approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #6 Lundy / Commerce
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|--------------||--------------||--------------||--------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|--------------||--------------||--------------||--------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:   37  383    16     9  786    15     9    1    41    59    2    11
------------|--------------||--------------||--------------||--------------|
Major Street Volume:             1246
Minor Approach Volume:           72
Minor Approach Volume Threshold: 209
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #7: Lundy / McKay

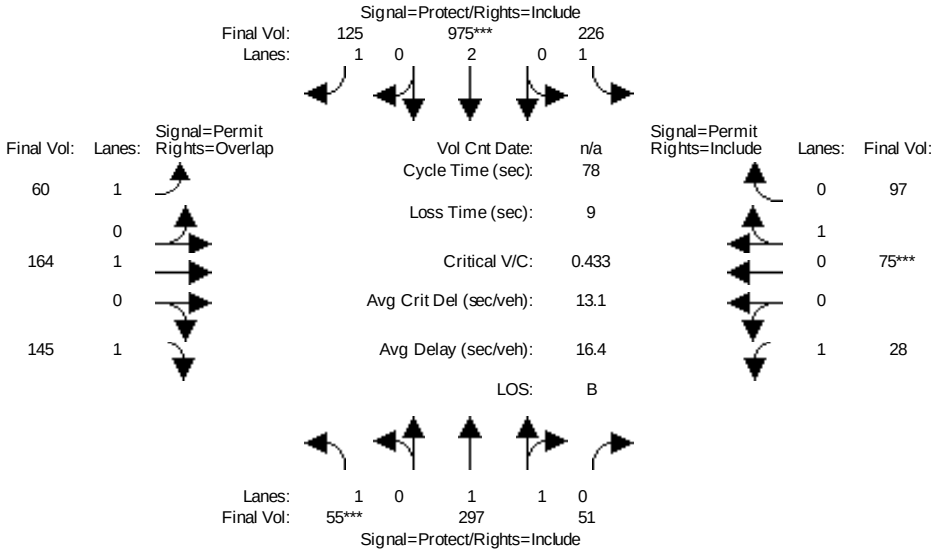


Street Name:	Lundy Ave						McKay Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	343	617	66	101	174	179	65	63	51	17	140	80
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:	343	617	66	101	174	179	65	63	51	17	140	80
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:	343	617	66	101	174	179	65	63	51	17	140	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	343	617	66	101	174	179	65	63	51	17	140	80
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:	343	617	66	101	174	179	65	63	51	17	140	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.79	0.21	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.62	0.38
Final Sat.:	1750	3405	364	1750	3800	1750	1750	1900	1750	1750	1173	670
Capacity Analysis Module:												
Vol/Sat:	0.20	0.18	0.18	0.06	0.05	0.10	0.04	0.03	0.03	0.01	0.12	0.12
Crit Moves:	****					****					****	
Green/Cycle:	0.42	0.42	0.42	0.21	0.22	0.22	0.25	0.25	0.67	0.25	0.25	0.25
Volume/Cap:	0.47	0.43	0.43	0.28	0.21	0.47	0.15	0.13	0.04	0.04	0.47	0.47
Uniform Del:	16.6	15.9	15.9	25.9	25.1	26.7	22.6	22.5	4.4	22.0	24.7	24.7
IncremntDel:	0.5	0.2	0.2	0.4	0.1	0.9	0.2	0.1	0.0	0.0	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.1	16.1	16.1	26.3	25.2	27.6	22.8	22.6	4.4	22.0	25.5	25.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	16.1	16.1	26.3	25.2	27.6	22.8	22.6	4.4	22.0	25.5	25.5
LOS by Move:	B	B	B	C	C	C	C	C	A	C	C	C
HCM2k95thQ:	12	11	11	4	3	8	3	2	1	1	10	10

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #7: Lundy / McKay

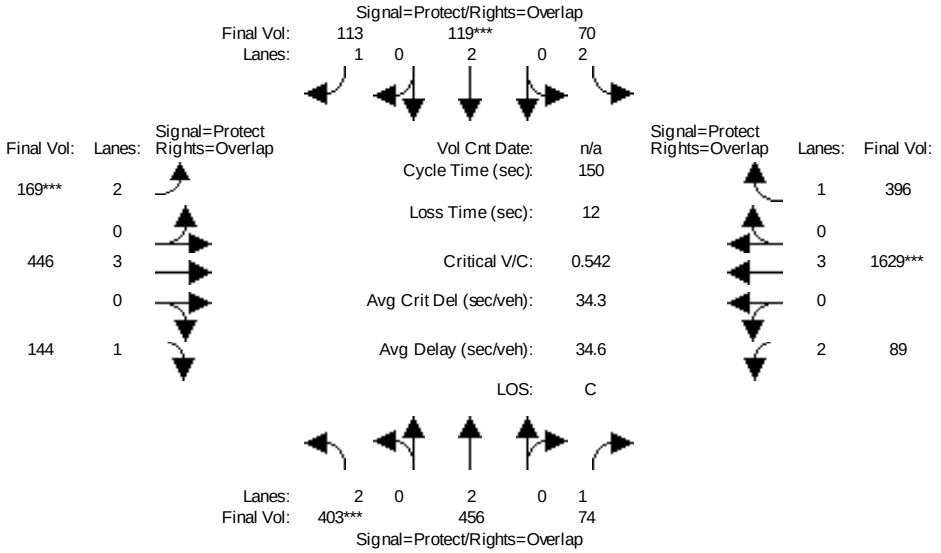


Street Name:	Lundy Ave						McKay Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	55	297	51	226	975	125	60	164	145	28	75	97
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:	55	297	51	226	975	125	60	164	145	28	75	97
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:	55	297	51	226	975	125	60	164	145	28	75	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	297	51	226	975	125	60	164	145	28	75	97
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:	55	297	51	226	975	125	60	164	145	28	75	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.69	0.31	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.42	0.58
Final Sat.:	1750	3203	550	1750	3800	1750	1750	1900	1750	1750	790	1022
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.13	0.26	0.07	0.03	0.09	0.08	0.02	0.09	0.09
Crit Moves:	****				****						****	
Green/Cycle:	0.09	0.33	0.33	0.34	0.58	0.58	0.21	0.21	0.30	0.21	0.21	0.21
Volume/Cap:	0.35	0.28	0.28	0.38	0.44	0.12	0.16	0.40	0.27	0.07	0.44	0.44
Uniform Del:	33.4	19.1	19.1	19.7	9.2	7.4	24.9	26.3	20.6	24.4	26.6	26.6
IncremntDel:	1.4	0.1	0.1	0.4	0.1	0.1	0.2	0.7	0.3	0.1	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.7	19.2	19.2	20.2	9.4	7.5	25.1	27.0	20.9	24.5	27.4	27.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.7	19.2	19.2	20.2	9.4	7.5	25.1	27.0	20.9	24.5	27.4	27.4
LOS by Move:	C	B	B	C	A	A	C	C	C	C	C	C
HCM2k95thQ:	3	6	6	9	12	3	3	7	6	1	8	8

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #8: Lundy / Murphy

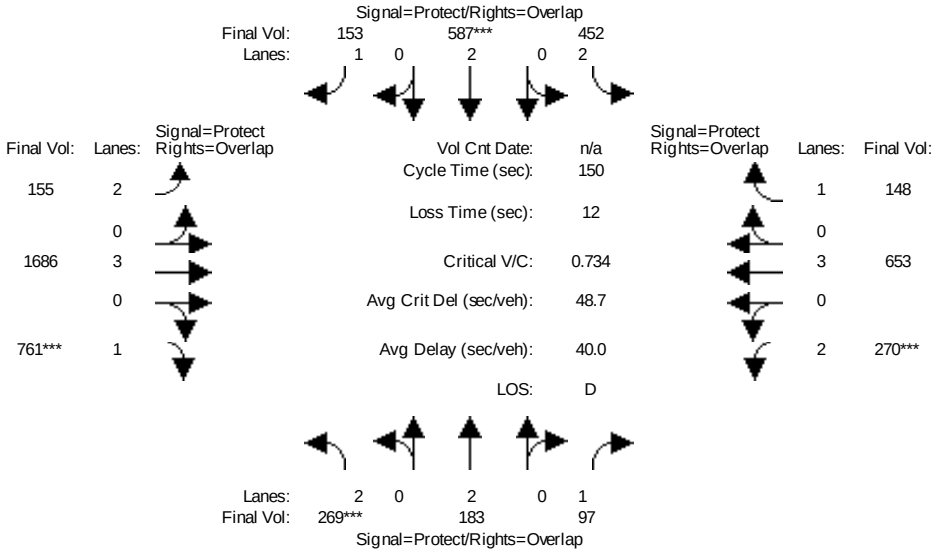


Street Name:	Lundy Ave						Murphy Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	403	456	74	70	119	113	169	446	144	89	1629	396
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:	403	456	74	70	119	113	169	446	144	89	1629	396
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:	403	456	74	70	119	113	169	446	144	89	1629	396
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	403	456	74	70	119	113	169	446	144	89	1629	396
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:	403	456	74	70	119	113	169	446	144	89	1629	396
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.12	0.04	0.02	0.03	0.06	0.05	0.08	0.08	0.03	0.29	0.23
Crit Moves:	****				****		****				****	
Green/Cycle:	0.23	0.22	0.45	0.08	0.07	0.16	0.10	0.39	0.62	0.23	0.52	0.61
Volume/Cap:	0.55	0.56	0.09	0.26	0.47	0.39	0.55	0.20	0.13	0.12	0.55	0.37
Uniform Del:	50.5	52.4	23.9	64.3	67.4	56.0	64.5	30.5	11.7	45.6	24.0	15.1
IncremntDel:	0.9	0.8	0.1	0.5	1.4	0.9	2.1	0.0	0.1	0.1	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.4	53.2	23.9	64.9	68.8	56.8	66.6	30.5	11.7	45.7	24.2	15.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.4	53.2	23.9	64.9	68.8	56.8	66.6	30.5	11.7	45.7	24.2	15.3
LOS by Move:	D	D	C	E	E	E	E	C	B	D	C	B
HCM2k95thQ:	19	18	4	4	5	10	10	9	6	4	28	18

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #8: Lundy / Murphy

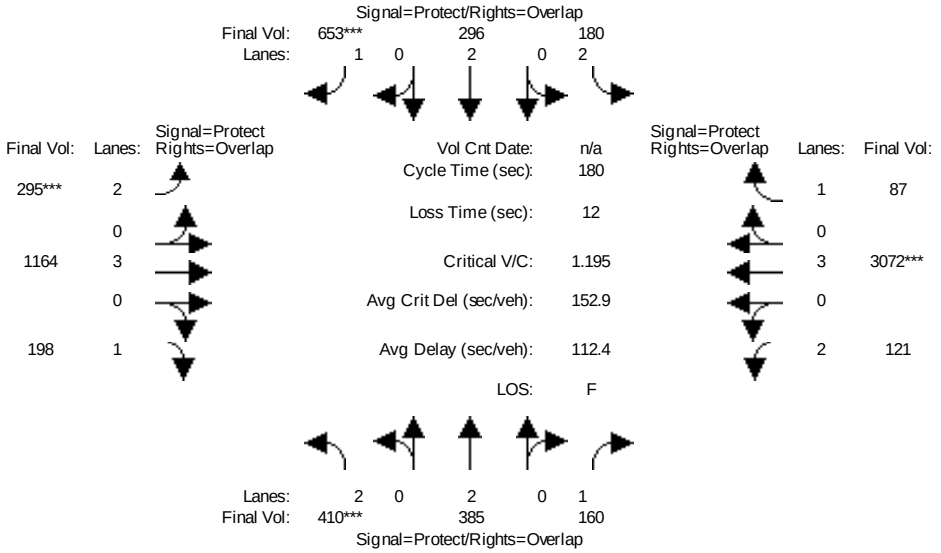


Street Name:	Lundy Ave						Murphy Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	269	183	97	452	587	153	155	1686	761	270	653	148
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:	269	183	97	452	587	153	155	1686	761	270	653	148
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:	269	183	97	452	587	153	155	1686	761	270	653	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	269	183	97	452	587	153	155	1686	761	270	653	148
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:	269	183	97	452	587	153	155	1686	761	270	653	148
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.05	0.06	0.14	0.15	0.09	0.05	0.30	0.43	0.09	0.11	0.08
Crit Moves:	****				****				****	****		
Green/Cycle:	0.12	0.10	0.22	0.22	0.21	0.39	0.18	0.48	0.59	0.12	0.41	0.64
Volume/Cap:	0.73	0.46	0.25	0.64	0.73	0.22	0.28	0.62	0.73	0.73	0.28	0.13
Uniform Del:	64.0	63.3	48.2	52.8	55.3	30.7	53.3	29.2	22.0	64.0	29.0	10.7
IncremntDel:	7.5	0.9	0.3	2.0	3.5	0.2	0.3	0.4	2.7	7.5	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.5	64.2	48.6	54.9	58.8	30.9	53.5	29.7	24.8	71.4	29.1	10.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.5	64.2	48.6	54.9	58.8	30.9	53.5	29.7	24.8	71.4	29.1	10.8
LOS by Move:	E	E	D	D	E	C	D	C	C	E	C	B
HCM2k95thQ:	16	9	8	20	23	9	7	32	45	16	12	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #9: Montague / Oakland

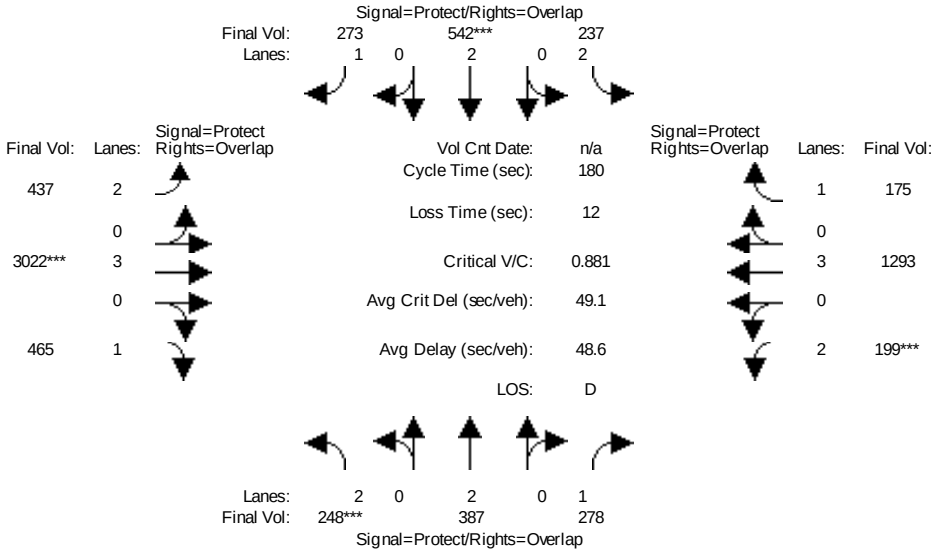


Street Name:	Oakland Rd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	410	385	160	180	296	653	295	1164	198	121	3072	87
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:	410	385	160	180	296	653	295	1164	198	121	3072	87
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:	410	385	160	180	296	653	295	1164	198	121	3072	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	385	160	180	296	653	295	1164	198	121	3072	87
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:	410	385	160	180	296	653	295	1164	198	121	3072	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2992	3800	1488	2992	3800	1488	2992	5700	1488	2992	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.14	0.10	0.11	0.06	0.08	0.44	0.10	0.20	0.13	0.04	0.54	0.06
Crit Moves:	****					****	****				****	
Green/Cycle:	0.11	0.25	0.34	0.15	0.28	0.37	0.08	0.45	0.56	0.09	0.45	0.60
Volume/Cap:	1.19	0.40	0.32	0.40	0.27	1.19	1.19	0.46	0.24	0.46	1.19	0.10
Uniform Del:	79.7	56.2	44.1	69.4	49.9	56.9	82.6	34.8	20.1	78.0	49.4	15.3
IncremntDel:	112.6	0.3	0.4	0.6	0.1	104.5	120.2	0.1	0.1	1.3	91.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	192.3	56.5	44.4	70.0	50.0	161.4	202.7	34.9	20.2	79.2	141	15.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	192.3	56.5	44.4	70.0	50.0	161.4	202.7	34.9	20.2	79.2	141	15.3
LOS by Move:	F	E	D	E	D	F	F	C	C	E	F	B
HCM2k95thQ:	35	16	13	11	12	83	28	25	11	7	113	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #9: Montague / Oakland

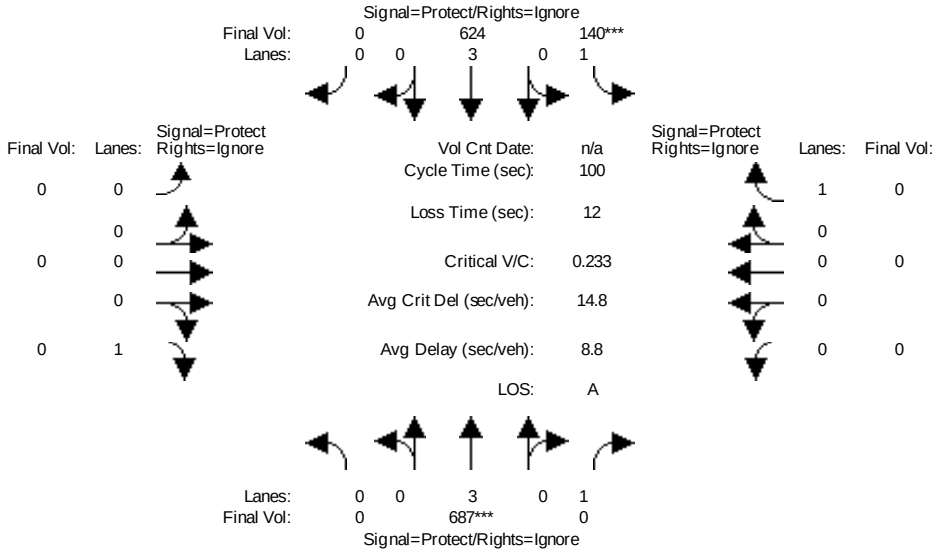


Street Name:	Oakland Rd						Montague Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	248	387	278	237	542	273	437	3022	465	199	1293	175
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:	248	387	278	237	542	273	437	3022	465	199	1293	175
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:	248	387	278	237	542	273	437	3022	465	199	1293	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	248	387	278	237	542	273	437	3022	465	199	1293	175
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:	248	387	278	237	542	273	437	3022	465	199	1293	175
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78	0.79	1.00	0.78
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2992	3800	1488	2992	3800	1488	2992	5700	1488	2992	5700	1488
Capacity Analysis Module:												
Vol/Sat:	0.08	0.10	0.19	0.08	0.14	0.18	0.15	0.53	0.31	0.07	0.23	0.12
Crit Moves:	****				****			****			****	
Green/Cycle:	0.09	0.15	0.23	0.10	0.16	0.43	0.27	0.60	0.70	0.08	0.41	0.51
Volume/Cap:	0.88	0.66	0.81	0.78	0.88	0.43	0.55	0.88	0.45	0.88	0.55	0.23
Uniform Del:	80.5	71.6	65.6	78.9	73.7	36.2	56.9	30.4	12.1	82.4	40.2	24.1
IncremntDel:	25.8	2.8	13.8	12.2	13.9	0.5	0.8	3.0	0.3	30.4	0.3	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	106.4	74.4	79.4	91.1	87.6	36.6	57.7	33.3	12.4	112.8	40.5	24.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.4	74.4	79.4	91.1	87.6	36.6	57.7	33.3	12.4	112.8	40.5	24.3
LOS by Move:	F	E	E	F	F	D	E	C	B	F	D	C
HCM2k95thQ:	19	20	30	17	30	20	23	74	22	14	30	11

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #10: I-880 NB / N Capitol

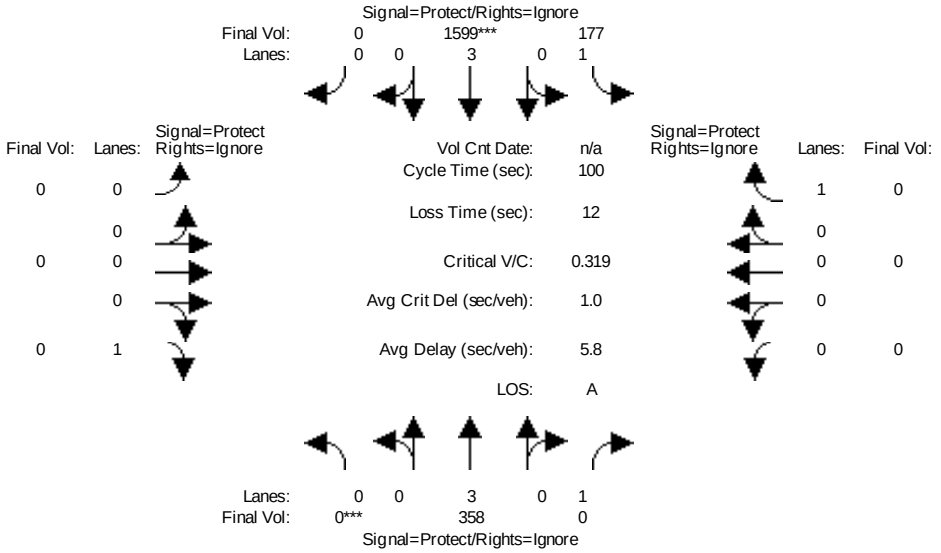


Street Name:	N Capitol Ave						I-880 NB Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	687	615	140	624	0	0	0	0	0	0	578
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	687	615	140	624	0	0	0	0	0	0	578
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	687	0	140	624	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	687	0	140	624	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	687	0	140	624	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.88	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	0	5700	1750	1663	5700	0	0	0	1750	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.12	0.00	0.08	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****			****							
Green/Cycle:	0.00	0.52	0.00	0.36	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.23	0.00	0.23	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	13.2	0.0	22.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	13.2	0.0	22.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.2	0.0	22.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	B	A	C	A	A	A	A	A	A	A	A
HCM2k95thQ:	0	8	0	6	2	0	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #10: I-880 NB / N Capitol

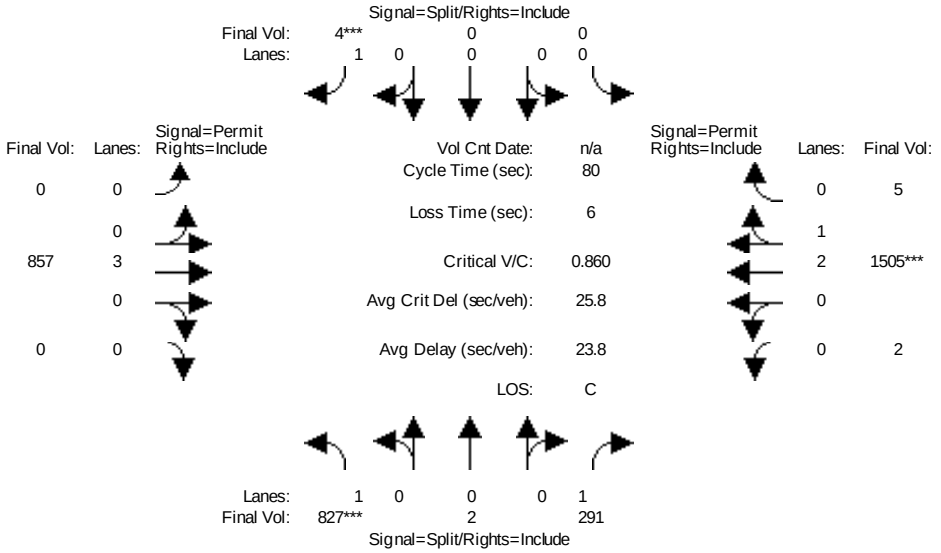


Street Name:	N Capitol Ave						I-880 NB Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	358	443	177	1599	0	0	0	0	0	0	301
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	358	443	177	1599	0	0	0	0	0	0	301
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	358	0	177	1599	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	358	0	177	1599	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	358	0	177	1599	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.88	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	0	5700	1750	1663	5700	0	0	0	1750	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.00	0.11	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****							
Green/Cycle:	0.00	0.33	0.00	0.55	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.19	0.00	0.19	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	24.2	0.0	11.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	24.2	0.0	11.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.2	0.0	11.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	C	A	B	A	A	A	A	A	A	A	A
HCM2k95thQ:	0	5	0	6	6	0	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_AM

Intersection #11: I-880 NB / Hostetter

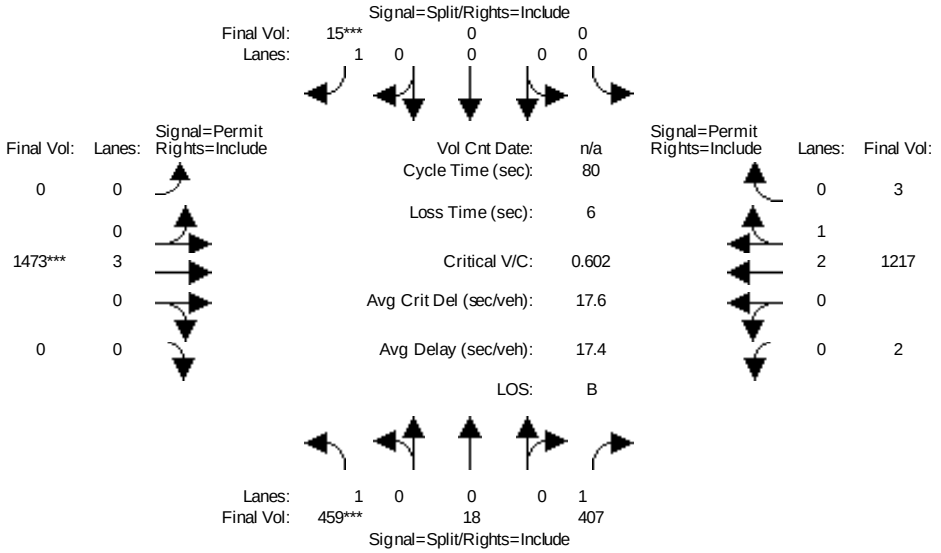


Street Name:	I-880 NB Ramp						Hostetter Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	0	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	827	2	291	0	0	4	0	857	0	2	1505	5
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:	827	2	291	0	0	4	0	857	0	2	1505	5
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:	827	2	291	0	0	4	0	857	0	2	1505	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	827	2	291	0	0	4	0	857	0	2	1505	5
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:	827	2	291	0	0	4	0	857	0	2	1505	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.93	0.85	0.92	1.00	0.80	0.92	1.00	0.92	0.87	0.94	0.87
Lanes:	1.00	0.01	0.99	0.00	0.00	1.00	0.00	3.00	0.00	0.01	2.98	0.01
Final Sat.:	1621	11	1611	0	0	1514	0	5700	0	7	5331	18
Capacity Analysis Module:												
Vol/Sat:	0.51	0.18	0.18	0.00	0.00	0.00	0.00	0.15	0.00	0.28	0.28	0.28
Crit Moves:	****					****					****	
Green/Cycle:	0.59	0.59	0.59	0.00	0.00	0.00	0.00	0.33	0.00	0.33	0.33	0.33
Volume/Cap:	0.86	0.30	0.30	0.00	0.00	0.86	0.00	0.46	0.00	0.86	0.86	0.86
Uniform Del:	13.5	8.1	8.1	0.0	0.0	39.9	0.0	21.2	0.0	25.1	25.1	25.1
IncremntDel:	6.0	0.0	0.0	0.0	0.0	310.4	0.0	0.2	0.0	4.5	4.5	4.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	19.5	8.1	8.1	0.0	0.0	350.3	0.0	21.4	0.0	29.7	29.7	29.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.5	8.1	8.1	0.0	0.0	350.3	0.0	21.4	0.0	29.7	29.7	29.7
LOS by Move:	B	A	A	A	A	F	A	C	A	C	C	C
HCM2k95thQ:	36	8	8	0	0	2	0	11	0	26	26	26

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
BG_PM

Intersection #11: I-880 NB / Hostetter



Street Name:	I-880 NB Ramp						Hostetter Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	0	10	0	0	10	10
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
Volume Module:												
Base Vol:	459	18	407	0	0	15	0	1473	0	2	1217	3
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:	459	18	407	0	0	15	0	1473	0	2	1217	3
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:	459	18	407	0	0	15	0	1473	0	2	1217	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	18	407	0	0	15	0	1473	0	2	1217	3
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:	459	18	407	0	0	15	0	1473	0	2	1217	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.91	0.84	0.92	1.00	0.80	0.92	1.00	0.92	0.86	0.94	0.86
Lanes:	1.00	0.04	0.96	0.00	0.00	1.00	0.00	3.00	0.00	0.01	2.98	0.01
Final Sat.:	1589	68	1526	0	0	1514	0	5700	0	9	5317	13
Capacity Analysis Module:												
Vol/Sat:	0.29	0.27	0.27	0.00	0.00	0.01	0.00	0.26	0.00	0.23	0.23	0.23
Crit Moves:	****					****		****				
Green/Cycle:	0.48	0.48	0.48	0.00	0.00	0.02	0.00	0.43	0.00	0.43	0.43	0.43
Volume/Cap:	0.60	0.56	0.56	0.00	0.00	0.60	0.00	0.60	0.00	0.53	0.53	0.53
Uniform Del:	15.2	14.8	14.8	0.0	0.0	39.1	0.0	17.6	0.0	16.9	16.9	16.9
IncremntDel:	0.7	0.4	0.4	0.0	0.0	35.2	0.0	0.4	0.0	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	15.9	15.2	15.2	0.0	0.0	74.2	0.0	18.0	0.0	17.2	17.2	17.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.2	15.2	0.0	0.0	74.2	0.0	18.0	0.0	17.2	17.2	17.2
LOS by Move:	B	B	B	A	A	E	A	B	A	B	B	B
HCM2k95thQ:	18	16	16	0	0	3	0	18	0	15	15	15

Note: Queue reported is the number of cars per lane.

Appendices F – MUTCD Signal Warrant Criteria

CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

Standard:

01 **An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.**

01a **On State highways, the engineering study shall include consideration of a roundabout (yield control). If a roundabout is determined to provide a viable and practical solution, it shall be studied in lieu of, or in addition to a traffic control signal.**

Guidance:

01b *On local streets and highways, the engineering study should include consideration of a roundabout (yield control). If a roundabout is determined to provide a viable and practical solution, it should be studied in lieu of, or in addition to a traffic control signal.*

Support:

01c Refer to Caltrans' website (http://www.dot.ca.gov/hq/traffops/liaisons/ice.html) for more information on the Traffic Operations Policy Directive 13-02, Intersection Control Evaluation (ICE), and other resources for the evaluation of intersection traffic control strategies.

02 **The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:**

Warrant 1, Eight-Hour Vehicular Volume
Warrant 2, Four-Hour Vehicular Volume
Warrant 3, Peak Hour
Warrant 4, Pedestrian Volume
Warrant 5, School Crossing
Warrant 6, Coordinated Signal System
Warrant 7, Crash Experience
Warrant 8, Roadway Network
Warrant 9, Intersection Near a Grade Crossing

03 **The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.**

Support:

04 Sections 8C.09 and 8C.10 contain information regarding the use of traffic control signals instead of gates and/ or flashing-light signals at highway-rail grade crossings and highway-light rail transit grade crossings, respectively.

Guidance:

05 *A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.*

06 *A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.*

07 *A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow.*

08 *The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2.*

09 *Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The*

approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.

10 *Similar engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.*

11 *At a location that is under development or construction and where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into stop-and-go operation to determine if the signal is justified. If not justified, the signal should be taken out of stop-and-go operation or removed.*

12 *For signal warrant analysis, a location with a wide median, even if the median width is greater than 30 feet, should be considered as one intersection.*

Option:

13 At an intersection with a high volume of left-turn traffic from the major street, the signal warrant analysis may be performed in a manner that considers the higher ~~of the major-street left-turn volumes as the "minor-street" volume and the corresponding single direction of opposing traffic on the major street as the "major-street" volume~~ volume of the major-street left-turn volumes plus the higher volume minor-street approach as the "minor street" volume and both approaches of the major street minus the higher of the major-street left-turn volume as "major street" volume.

14 For signal warrants requiring conditions to be present for a certain number of hours in order to be satisfied, any four sequential 15-minute periods may be considered as 1 hour if the separate 1-hour periods used in the warrant analysis do not overlap each other and both the major-street volume and the minor-street volume are for the same specific one-hour periods.

15 For signal warrant analysis, bicyclists may be counted as either vehicles or pedestrians.

Support:

16 When performing a signal warrant analysis, bicyclists riding in the street with other vehicular traffic are usually counted as vehicles and bicyclists who are clearly using pedestrian facilities are usually counted as pedestrians.

Option:

17 Engineering study data may include the following:

A. The number of vehicles entering the intersection in each hour from each approach during 12 hours of an average day. It is desirable that the hours selected contain the greatest percentage of the 24-hour traffic volume.
B. Vehicular volumes for each traffic movement from each approach, classified by vehicle type (heavy trucks, passenger cars and light trucks, public-transit vehicles, and, in some locations, bicycles), during each 15-minute period of the 2 hours in the morning and 2 hours in the afternoon during which total traffic entering the intersection is greatest.
C. Pedestrian volume counts on each crosswalk during the same periods as the vehicular counts in Item B and during hours of highest pedestrian volume. Where young, elderly, and/or persons with physical or visual disabilities need special consideration, the pedestrians and their crossing times may be classified by general observation.
D. Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements at the location under study. These persons might not be adequately reflected in the pedestrian volume count if the absence of a signal restrains their mobility.
E. The posted or statutory speed limit or the 85th-percentile speed on the uncontrolled approaches to the location.
F. A condition diagram showing details of the physical layout, including such features as intersection geometrics, channelization, grades, sight-distance restrictions, transit stops and routes, parking conditions,

pavement markings, roadway lighting, driveways, nearby railroad crossings, distance to nearest traffic control signals, utility poles and fixtures, and adjacent land use.

G. A collision diagram showing crash experience by type, location, direction of movement, severity, weather, time of day, date, and day of week for at least 1 year.

18 The following data, which are desirable for a more precise understanding of the operation of the intersection, may be obtained during the periods described in Item B of Paragraph 17:

A. Vehicle-hours of stopped time delay determined separately for each approach.

B. The number and distribution of acceptable gaps in vehicular traffic on the major street for entrance from the minor street.

C. The posted or statutory speed limit or the 85th-percentile speed on controlled approaches at a point near to the intersection but unaffected by the control.

D. Pedestrian delay time for at least two 30-minute peak pedestrian delay periods of an average weekday or like periods of a Saturday or Sunday.

E. Queue length on stop-controlled approaches.

Standard:

19 **Delay, congestion, approach conditions, driver confusion, future land use or other evidence of the need for right of way assignment beyond that which could be provided by stop sign shall be demonstrated.**

Support:

20 Figure 4C–101(CA) and 4C-103(CA) are examples of warrant sheets.

Guidance:

21 *Figure 4C-103(CA) should be used only for new intersections or other locations where it is not reasonable to count actual traffic volumes.*

Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume

Support:

01 The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

02 The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

Standard:

04 **The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Option:

05 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Guidance:

06 *The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.*

Standard:

07 **The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and

B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Option:

08 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Section 4C.03 Warrant 2, Four-Hour Vehicular Volume

Support:

01 The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.**

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Section 4C.04 Warrant 3, Peak Hour

Support:

01 The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Standard:

02 **This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.**

03 **The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:**

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Option:

04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in the second category of the Standard.

05 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Guidance:

06 *If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.*

Section 4C.05 Warrant 4, Pedestrian Volume

Support:

01 The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

Standard:

02 **The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:**

A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 35 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-6 may be used in place of Figure 4C-5 to evaluate Criterion A in Paragraph 2, and Figure 4C-8 may be used in place of Figure 4C-7 to evaluate Criterion B in Paragraph 2.

Standard:

04 **The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

05 **If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E.**

Guidance:

06 *If this warrant is met and a traffic control signal is justified by an engineering study, then:*

A. If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.

B. If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs, and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site

accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.

C. Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.

Option:

07 The criterion for the pedestrian volume crossing the major street may be reduced as much as 50 percent if the 15th-percentile crossing speed of pedestrians is less than 3.5 feet per second.

08 A traffic control signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provide gaps of adequate length for pedestrians to cross the street.

Section 4C.06 Warrant 5, School Crossing

Support:

01 The School Crossing signal warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purposes of this warrant, the word "schoolchildren" includes elementary through high school students.

Standard:

02 **The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of schoolchildren at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.**

03 **Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.**

04 **The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

Guidance:

05 *If this warrant is met and a traffic control signal is justified by an engineering study, then:*

A. If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.

B. If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs, and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.

C. Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.

Section 4C.07 Warrant 6, Coordinated Signal System

Support:

01 Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:**

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.

Guidance:

03 *The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1,000 feet.*

Section 4C.08 Warrant 7, Crash Experience

Support:

01 The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:**

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Section 4C.09 Warrant 8, Roadway Network

Support:

01 Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:**

A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or

B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).

03 **A major route as used in this signal warrant shall have at least one of the following characteristics:**

A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.

B. It includes rural or suburban highways outside, entering, or traversing a city.

C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Section 4C.10 Warrant 9, Intersection Near a Grade Crossing

Support:

01 The Intersection Near a Grade Crossing signal warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of a

grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

Guidance:

02 *This signal warrant should be applied only after adequate consideration has been given to other alternatives or after a trial of an alternative has failed to alleviate the safety concerns associated with the grade crossing. Among the alternatives that should be considered or tried are:*

A. Providing additional pavement that would enable vehicles to clear the track or that would provide space for an evasive maneuver, or

B. Reassigning the stop controls at the intersection to make the approach across the track a non-stopping approach.

Standard:

03 **The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:**

A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and

B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13.

Guidance:

04 *The following considerations apply when plotting the traffic volume data on Figure 4C-9 or 4C-10:*

A. Figure 4C-9 should be used if there is only one lane approaching the intersection at the track crossing location and Figure 4C-10 should be used if there are two or more lanes approaching the intersection at the track crossing location.

B. After determining the actual distance D, the curve for the distance D that is nearest to the actual distance D should be used. For example, if the actual distance D is 95 feet, the plotted point should be compared to the curve for D = 90 feet.

C. If the rail traffic arrival times are unknown, the highest traffic volume hour of the day should be used.

Option:

05 The minor-street approach volume may be multiplied by up to three adjustment factors as provided in Paragraphs 6 through 8.

06 Because the curves are based on an average of four occurrences of rail traffic per day, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-2 for the appropriate number of occurrences of rail traffic per day.

07 Because the curves are based on typical vehicle occupancy, if at least 2% of the vehicles crossing the track are buses carrying at least 20 people, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-3 for the appropriate percentage of high-occupancy buses.

08 Because the curves are based on tractor-trailer trucks comprising 10% of the vehicles crossing the track, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-4 for the appropriate distance and percentage of tractor-trailer trucks.

Standard:

09 **If this warrant is met and a traffic control signal at the intersection is justified by an engineering study, then:**

A. The traffic control signal shall have actuation on the minor street;

B. Preemption control shall be provided in accordance with Sections 4D.27, 8C.09, and 8C.10; and

C. The grade crossing shall have flashing-light signals (see Chapter 8C).

Guidance:

10 *If this warrant is met and a traffic control signal at the intersection is justified by an engineering study, the grade crossing should have automatic gates (see Chapter 8C).*

Section 4C.101(CA) Criterion for School Crossing Traffic Signals

01 **Standard:**

A. The signal shall be designed for full-time operation.

B. Pedestrian signal faces of the International Symbol type shall be installed at all marked crosswalks at signalized intersections along the "Suggested Route to School."

C. If an intersection is signalized under this guideline for school pedestrians, the entire intersection shall be signalized.

D. School area traffic signals shall be traffic actuated type with push buttons or other detectors for pedestrians.

Option:

02 Non-intersection school pedestrian crosswalk locations may be signalized when justified.

Appendices G – MUTCD Signal Warrant Worksheet

Lundy Avenue / Commerce Drive Signal Warrant

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 9/23/2021

DIST ____ CO ____ RTE ____ PM ____

CALC ATD DATE 9/23/2021

CHK KHA DATE 9/30/2021

Major St: Lundy Avenue — Critical Approach Speed 40 mph

Minor St: Commerce Drive — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐
or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)

☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R	11AM							6PM	Hour
APPROACH LANES	1		2 or More										
Both Approaches Major Street	500 (400)	350 (280)	600 X (480)	420 (336)	777	936	915	961	1052	1007	1129	967	
Highest Approach Minor Street	150 X (120)	105 (84)	200 (160)	140 (112)	39	38	54	95	73	80	73	37	

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

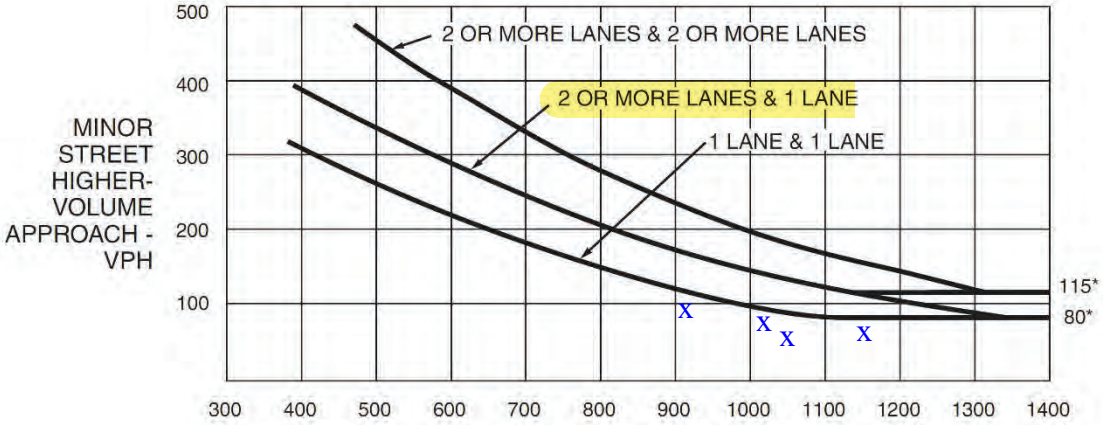
	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R	11AM							6PM	Hour
APPROACH LANES	1		2 or More										
Both Approaches Major Street	750 (600)	525 (420)	900 X (720)	630 (504)	777	936	915	961	1052	1007	1129	967	
Highest Approach Minor Street	75 X (60)	53 (42)	100 (80)	70 (56)	39	38	54	95	73	80	73	37	

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

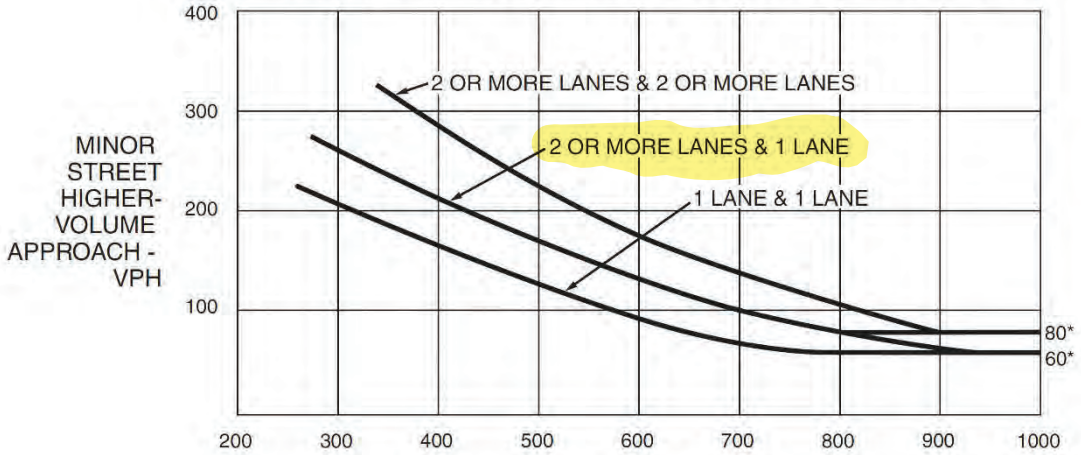
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET) N/A



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Lundy Avenue / Commerce Drive Signal Warrant

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	2PM			5PM Hour
Both Approaches - Major Street		x	961	1052	1007	1129
Higher Approach - Minor Street	x		95	73	80	73

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☒
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☐ NO ☒**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

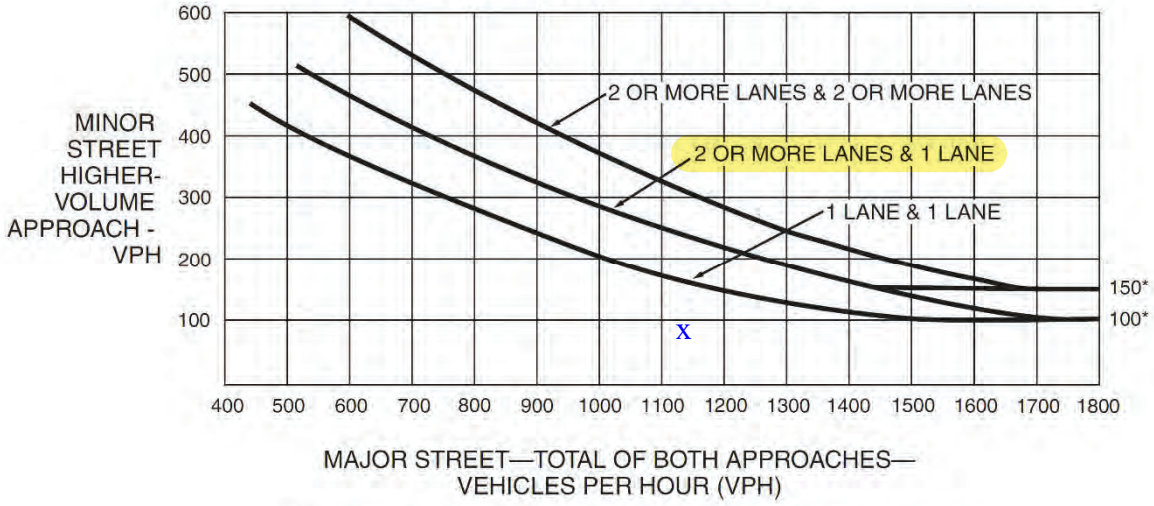
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	5PM Hour
Both Approaches - Major Street		x	1129
Higher Approach - Minor Street	x		73

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☒
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

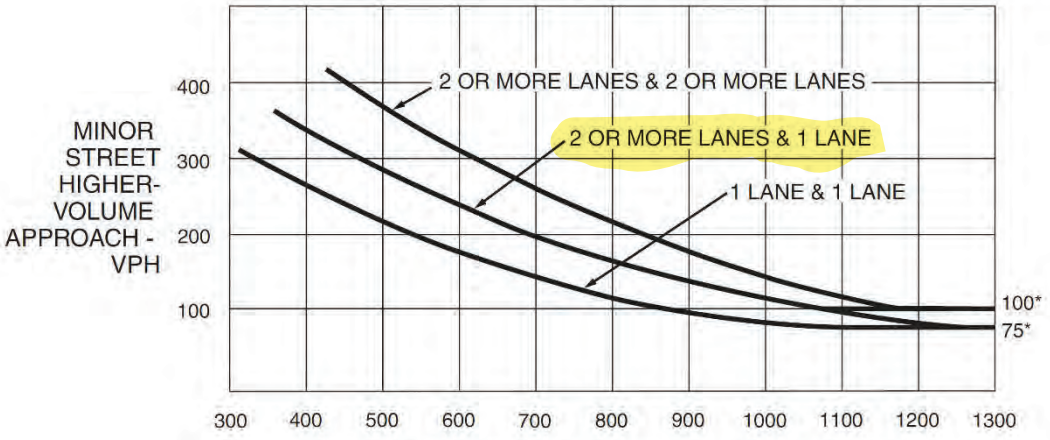
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET) N/A



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☒

Part 1 (Parts A or B must be satisfied)

	Hours - - ->				6PM
A.	Vehicles per hour for any 4 hours	1052	1007	1129	967
	Pedestrians per hour for any 4 hours	0	0	0	2

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☒

	Hours - - ->				6PM
B.	Vehicles per hour for any 1 hour	1052	1007	1129	967
	Pedestrians per hour for any 1 hour	0	0	0	2

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☒

Part 2 **SATISFIED YES ☒ NO ☐**

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☒ No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☒ No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☒

Part A
Gap/Minutes and # of Children

SATISFIED YES ☐ NO ☒

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	0
	Number of Adequate Gaps	99
School Age Pedestrians Crossing Street / hr		0

Gaps < Minutes YES ☐ NO ☒
AND Children > 20/hr YES ☐ NO ☒

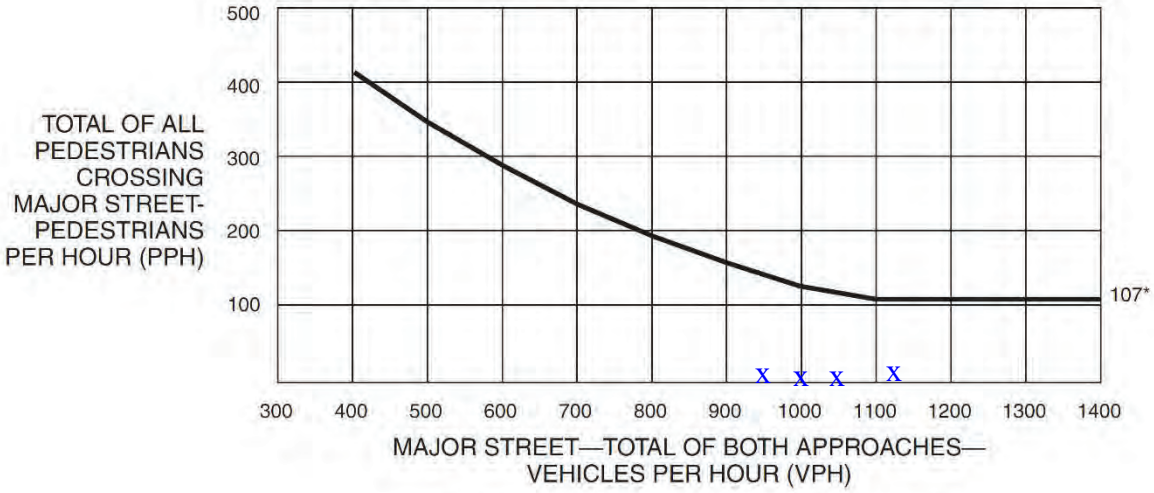
AND, Consideration has been given to less restrictive remedial measures.	Yes ☐ No ☒

Part B **SATISFIED YES ☒ NO ☐**

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☒ No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☒ No ☐

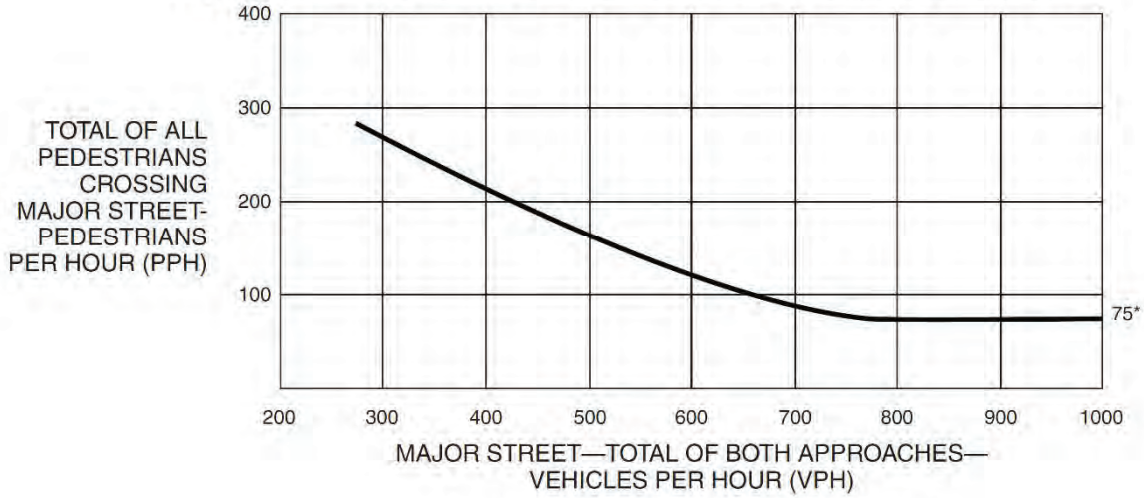
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor) N/A



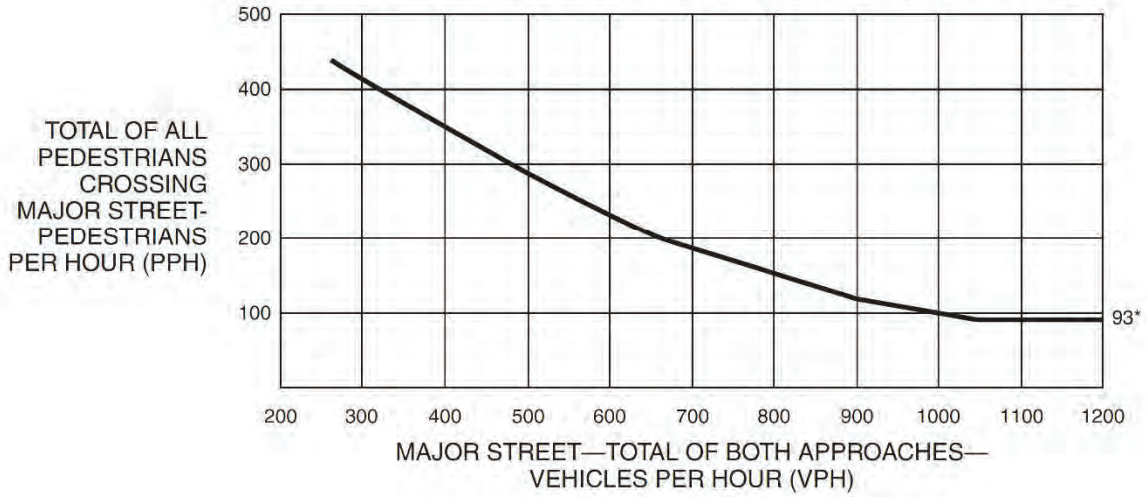
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour

*Note: 133 pph applies as the lower threshold volume.

N/A

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Lundy Avenue / Commerce Drive Signal Warrant

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N 950 ft, S 970 ft, E N/A ft, W N/A ft	Yes ☐ No ☒
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☐ No ☒
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☒
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		Yes ☐ No ☒
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

WARRANT 8 - Roadway Network **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour 1202 Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.	x	Yes ☒ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B
Hwy. System Serving as Principal Network for Through Traffic		
Rural or Suburban Highway Outside Of, Entering, or Traversing a City		
Appears as Major Route on an Official Plan	x	
Any Major Route Characteristics Met, Both Streets		Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Lundy Avenue / Commerce Drive Signal Warrant

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing **SATISFIED YES ☐ NO ☒**
(Both Parts A and B Must Be Satisfied)

PART A N/A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☒
PART B N/A **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☒
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

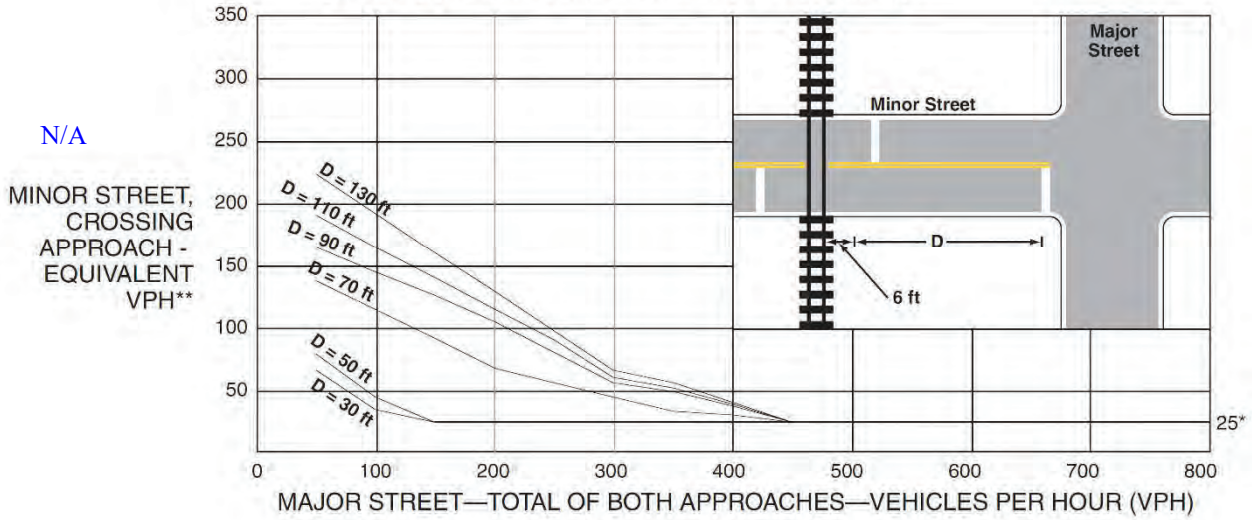
2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-9. Warrant 9, Intersection Near a Grade Crossing (One Approach Lane at the Track Crossing)

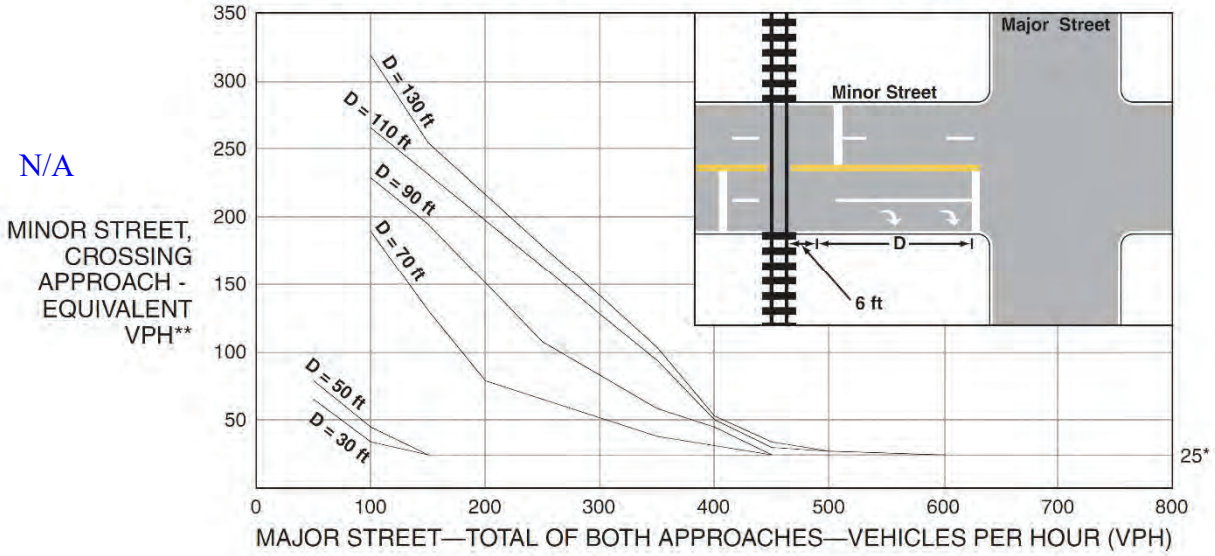
N/A



* 25 vph applies as the lower threshold volume
** VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

Figure 4C-10. Warrant 9, Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)

N/A



* 25 vph applies as the lower threshold volume
** VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

Appendices H – Warehouse Development Site Research

Warehouse Site Research			
Project	Office Space (ksf)	Warehouse Space (ksf)	% of Office Space
Qume-Bridge	**20,000**	**714,491**	**2.72%**
Rue Ferrari	10,000	302,772	3.20%
1605 7th Street	10,000	94,325	9.59%
2256 Junction TA	10,000	305,800	3.17%