

Appendix J

Traffic Appendix

Appendix J.1

Traffic Study

**TRANSPORTATION IMPACT STUDY
FOR THE
MODERA ARGYLE PROJECT
HOLLYWOOD, CALIFORNIA**

MARCH 2018
Revised February 2019 for Incorporation in the Draft EIR

**PREPARED FOR
MILL CREEK RESIDENTIAL**

PREPARED BY





MEMORANDUM

TO: Wes Pringle, Los Angeles Department of Transportation

CC: Brad Napientek, Eyestone Environmental

FROM: Patrick A. Gibson, P.E., T.E., PTOE, and Emily Wong, P.E.

DATE: February 7, 2019

RE: Transportation Impact Study for the
Modera Argyle Project
Hollywood, California

Ref: J1522

The approved March 2018 transportation impact study has been revised for consistency with the Draft Environmental Impact Report and to address comments provided by the Los Angeles Department of City Planning. Since the May 2018 approval of the transportation impact study, the design of the Supermarket Option has been refined to provide additional truck loading access. In addition, the vehicle and bicycle parking analysis has also been refined; however, the parking supply remains compliant with Code requirements. It should be noted that the refinements do not result in changes to the analyses assumptions, methodologies, and conclusions presented in the approved March 2018 transportation impact study.

Thus, the conclusions of the analysis presented in approved March 2018 transportation impact study remain valid.

**TRANSPORTATION IMPACT STUDY
FOR THE
MODERA ARGYLE PROJECT
HOLLYWOOD, CALIFORNIA**

March 2018
Revised February 2019 for Incorporation in the Draft EIR

Prepared for:

MILL CREEK RESIDENTIAL

Prepared by:

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Ref: J1522

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Chapter 1

Introduction

This study presents the transportation impact analysis for the proposed Modera Argyle project (the Project) located at 1546 Argyle Avenue (Project Site) in the Hollywood community of the City of Los Angeles (the City). The methodology and base assumptions used in the analysis were established in conjunction with the Los Angeles Department of Transportation (LADOT).

PROJECT DESCRIPTION

The Project proposes the construction of a mixed-use development that includes up to 276 apartment units and approximately 24,000 square feet (sf) of ground floor neighborhood-serving commercial uses that would contain 9,000 sf of retail uses and 15,000 sf of restaurant uses. The existing office, retail, and warehouse uses, which comprise of approximately 62,000 sf of floor area, as well as the associated surface parking lot, would be removed with development of the Project.

An alternate Project option was analyzed in the event that the ground floor neighborhood-serving commercial space is developed with a 27,000 sf supermarket ("Supermarket Option") instead of the retail and restaurant uses. The analysis of the Supermarket Option is presented in Chapter 8.

Parking for the Project would be provided in an on-site, multi-level parking garage. Vehicular access to the parking levels would be provided via a full-access driveway (accommodating left-turn and right-turn ingress and egress movements) along Selma Avenue. Access for truck loading would also be provided via a driveway along Selma Avenue. Additional truck loading access would be provided on Argyle Avenue with the Supermarket Option. Bicycle parking spaces would also be provided within the Project Site.

The conceptual site plans for the Project and Supermarket Option are shown in Figures 1A and 1B.

PROJECT LOCATION

The Project Site is within the *Hollywood Community Plan* (Los Angeles Department of City Planning, 1988) area. Generally, the Project Site is bounded by Selma Avenue to the north, surface parking lots to the east and south, and Argyle Avenue to the west.

The Project Site is located less than 0.5 mile south of the Hollywood Freeway (US 101), which provides regional transportation between downtown Los Angeles (approximately 5.50 miles southeast) and the San Fernando Valley (approximately 8.0 miles northwest). In the vicinity of the Project Site, the Hollywood community is served by major arterial streets such as Hollywood Boulevard and Sunset Boulevard and secondary arterial streets such as Vine Street.

The Project Site is located less than 0.25 mile south of the Los Angeles County Metropolitan Transportation Authority's (Metro) Red Line Hollywood/Vine station. The Red Line subway travels between Union Station in downtown Los Angeles and North Hollywood in the San Fernando Valley at 10-minute intervals throughout the day. Additionally, transit bus service is provided throughout the Study Area by Metro and LADOT Downtown Area Shuttle (DASH) service bus lines.

TRAFFIC ANALYSIS METHODOLOGY

Study Scope and Analysis Conditions

The scope of analysis for this Transportation Impact Study was developed in consultation with LADOT. The base assumptions and technical methodologies (i.e., trip generation, study locations, analysis methodology, etc.) were identified as part of the study approach and were outlined in a Memorandum of Understanding (MOU), which was reviewed and approved by LADOT on April 10, 2017. As part of the MOU, a review of the freeway impact analysis screening criteria on the California Department of Transportation (Caltrans) facilities (i.e., ramps and freeway segments) was prepared pursuant to the *First Amendment to the Agreement between LADOT and Caltrans*

District 7 on Freeway Impact Analysis Procedures (State of California and City of Los Angeles, December 15, 2015) (“Caltrans Agreement”). A copy of the signed MOU, which includes the Caltrans freeway screening analysis, is provided in Appendix A. As detailed in the MOU, the Project-related traffic on Caltrans freeway facilities would exceed the thresholds of the Caltrans Agreement. Therefore, further Caltrans analyses were required, and are presented in the Appendices.

This Transportation Impact Study analyzed the potential Project-generated transportation impacts on the street system in the vicinity of the Project Site as compared to Existing Conditions and projected Future Conditions at the time the Project is expected to be built and occupied (Year 2023). Potential intersection impacts were evaluated for typical weekday morning (7:00 AM to 10:00 AM) and afternoon (3:00 PM to 6:00 PM) peak periods. A total of 29 intersections, 22 signalized and seven unsignalized, in the vicinity of the Project Site were selected for detailed traffic analysis. This area is considered the transportation analysis Study Area. The intersections are listed in Table 1 and shown in Figure 2.

Consistent with *Transportation Impact Study Guidelines* (LADOT, December 2016), the following traffic conditions were developed and analyzed as part of this Transportation Impact Study:

- Existing Conditions (Year 2017) – The analysis of existing traffic conditions provides a basis for the assessment of future traffic conditions. The Existing Conditions analysis includes a description of key area streets and highways, traffic volumes and current operating conditions, and transit service in the Study Area. Intersection turning movement counts at the study intersections were collected in May 2015, November 2016, and December 2016 during typical weekday morning (7:00 AM to 10:00 AM) and afternoon (3:00 PM to 6:00 PM) peak periods. The counts were grown by 1% per year to reflect Year 2017 conditions. Local schools were in session when all traffic counts were conducted and the weather conditions were typical. Fieldwork (lane configurations and signal phasing) for the analyzed intersections was also collected and reconfirmed in 2017. Intersection lane configurations are provided in Appendix B, traffic count worksheets in Appendix C, and level of service (LOS) worksheets in Appendix D.
- Existing with Project Conditions (Year 2017) – This analysis condition projects the potential intersection operating conditions that could be expected if the Project were built under existing conditions. This analysis evaluates the potential Project-related traffic impacts as compared to Existing Conditions.
- Future without Project Conditions (Year 2023) – This analysis projects the future traffic growth and intersection operating conditions that could be expected as a result of regional growth and related project traffic in the Study Area by Year 2023. The Future without Project traffic conditions are projected by adding ambient traffic growth and

traffic from related projects to Existing Conditions. This analysis provides the conditions by which the Project impacts are evaluated in the future at full buildout.

- Future with Project Conditions (Year 2023) – This analysis projects the potential intersection operating conditions that could be expected if the Project were built in the projected buildout year. This analysis identifies the potential incremental impacts of the Project at full buildout, prior to any potentially required mitigation, on projected future traffic operating conditions by adding the Project-generated traffic to the Future without Project traffic forecasts.

Signalized Intersection Analysis Methodology

Intersection capacity has been analyzed using the “Critical Movement Analysis (CMA) – Planning” (*Transportation Research Circular No. 212, Interim Materials on Highway Capacity*, Transportation Research Board, 1980) methodology in accordance with *Transportation Impact Study Guidelines*. The CMA methodology was implemented using LADOT’s Calcadb Lite spreadsheet application to analyze intersection operating conditions. The methodology calculates the volume-to-capacity (V/C) ratio, which is used to determine the intersection LOS according to the LOS definitions provided in Table 2. It should be noted that, based on field observations, the CMA methodology does not in every case account for vehicular queues along corridors, pedestrian conflicts, etc. and, thus, the calculated average operating conditions may appear better than is observed. LOS worksheets for each scenario are provided in Appendix D.

The Automated Traffic Surveillance and Control (ATSAC) system represents an advanced system in computer control of traffic signals. It was first put into operation in June 1984 in the Coliseum area of the City to anticipate the expected increase in traffic due to the Summer Olympic Games, and has since been expanded to other parts of the City. The advantages of ATSAC-controlled traffic signals are substantial, including real-time adjustment of signal timing plans to reflect changing traffic conditions, identification of unusual traffic conditions caused by incidents, the ability to implement special purpose short-term signal timing changes in response to incidents, and the ability to identify signal equipment malfunctions quickly. LADOT estimates that implementation of this system improves intersection capacity by an average of 7%.

In addition to ATSAC, the Adaptive Traffic Control System (ATCS) has been implemented in the City. ATCS is a computer-based traffic signal control program that provides fully responsive traffic signal control based on real-time traffic conditions. It automatically adjusts and optimizes

traffic signal timing in response to current traffic demands on the entire signal network such that the number of stops and the amount of delay is minimized along with improved traffic signal coordination throughout the network. LADOT estimates that implementation of this system improves intersection capacity by an additional 3% over those operating under the ATSAC system alone.

Each of the signalized study intersections under LADOT jurisdiction is equipped with both ATSAC and ATCS. In accordance with standard LADOT procedures, a capacity increase of 10% (0.10 V/C adjustment) was applied to each intersection to reflect the benefits of ATSAC and ATCS control. The capacity increases are applied within the Calcadb Lite software and, therefore, are inherent in the analysis results.

Unsignalized Intersection Analysis Methodology

Based on *Transportation Impact Study Guidelines*, unsignalized intersections are evaluated to determine the need for the installation of a traffic signal. The unsignalized intersections were analyzed using *2010 Highway Capacity Manual* (Transportation Research Board, 2010) (HCM) methodology to determine the overall intersection delay. The HCM methodology calculates the average delay, in seconds, of a vehicle passing through the intersection in any direction. The average delay is used to determine the intersection LOS according to the LOS definitions provided in Table 2. The analysis worksheets for each scenario are provided in Appendix D.

Pursuant to *Transportation Impact Study Guidelines*, if, based on the estimated delay, the resultant LOS is E or F in the Future with Project Conditions, the intersection should be evaluated for the potential installation of a new traffic signal through a traffic signal warrant analysis. It should be noted that the determination that an unsignalized intersection meets the criteria of a traffic signal warrant does not in itself require the installation of a signal. Rather, the decision on whether a traffic signal should be installed is made by the governing jurisdictions taking into consideration other factors such as distance to adjacent signalized intersections and interruption to traffic flow along the major street.

IMPACT CRITERIA AND SIGNIFICANCE THRESHOLDS

The significance of the potential impacts of Project generated traffic at the signalized study intersections was determined using criteria identified in *Transportation Impact Study Guidelines*. LADOT guidelines indicate that a project is considered to have a significant transportation impact on a signalized intersection if the increase in the V/C ratio attributable to the project exceeds a specific threshold depending on the final intersection LOS. LADOT has developed a sliding scale methodology in which the minimum allowable increase in the V/C ratio attributable to a project decreases as the V/C ratio of the intersection increases:

Intersection Conditions with Project Traffic		Significant Impact Threshold for Project-related Increase in V/C Ratio
LOS	V/C	
C	0.701 – 0.800	Equal to or greater than 0.04
D	0.801 – 0.900	Equal to or greater than 0.02
E, F	> 0.900	Equal to or greater than 0.01

Source: City of Los Angeles.

The relative impact of the added traffic volumes to be generated by the Project was evaluated based on analysis of existing and future operating conditions at the study intersections, with and without the Project. An intersection operating at LOS A or B after the addition of Project traffic would not be significantly impacted, regardless of the volume of traffic added to that intersection by the Project or the incremental change to V/C ratio.

ADDITIONAL TRAFFIC ANALYSES

Congestion Management Program

An analysis also was conducted according to *2010 Los Angeles County Congestion Management Program* (Metro, 2010) (CMP) guidelines. The CMP is a State-mandated program that serves as the monitoring and analytical basis for transportation funding decisions in the County made through the Regional Transportation Improvement Program and State Transportation Improvement Program processes. The CMP requires that a Traffic Impact

Analysis (TIA) be performed (1) for all CMP arterial monitoring intersections where a project would add 50 or more trips during either the morning or afternoon weekday peak hours; and (2) all mainline freeway monitoring locations where a project would add 150 or more trips (in either direction) during the morning or afternoon weekday peak hours. In addition, it requires a review of potential impacts to the regional transit system.

The required CMP analyses were performed, as detailed in Chapter 7, in accordance with the TIA guidelines referenced in the CMP.

State of California Senate Bill No. 743

Senate Bill 743 (Steinberg, 2013) (SB 743), made effective in January 2014, requires the Governor's Office of Planning and Research to change the California Environmental Quality Act (CEQA) guidelines regarding the analysis of transportation impacts. Under SB 743, the focus of transportation analysis will shift from driver delay to vehicle miles traveled (VMT), reduction of greenhouse gas emissions (GHG), and creation of multimodal networks and promotion of mixed-use developments. Although originally scheduled to be fully implemented in the CEQA guidelines by January 1, 2016, an extension has allowed cities more time to establish an analysis methodology. The City is currently in the process of updating its travel demand model and transportation impact thresholds based on VMT. To better align with the State's multimodal transportation and environmental action goals, Caltrans is also pursuing VMT as a metric of Project impacts, which is outlined in *Local Development – Intergovernmental Review Program Interim Guide* (Caltrans, Approved September 2016) (Caltrans Interim Guide).

The Project characteristics (e.g., its location, proximity to transit, access to other nearby destinations, pedestrian connections, bicycle amenities, etc.) would encourage non-automobile modes of transportation such as walking, bicycling, carpool, vanpool, transit, etc. and, therefore, would reduce VMT to the Project Site and associated transportation-related GHG emissions. The Project Site represents an urban/compact infill location within the Hollywood community and is located within 0.25 mile of the Metro Red Line Hollywood/Vine station. Therefore, more patrons of the Project and other institutions in the area would utilize transit, which would reduce the number of single occupant vehicles traveling to/from the Project Site.

Access to on-site uses would be provided from existing pedestrian pathways, as well as adequate bicycle parking. Streets within 0.50 mile of the Project Site are equipped with sidewalks and signalized intersections include marked crosswalks and/or countdown signal timers. The combined effects of these factors would reduce the Project's anticipated vehicle trips and VMT and encourage walking and non-automobile forms of transportation, which results in corresponding reductions in transportation-related emissions. At this time, the transportation analysis herein is pursuant to adopted rules and policies, while recognizing the benefits of transit-oriented development and the context of reduced VMT goals.

Caltrans

The Caltrans Interim Guide suggests the approach with which Caltrans can recommend improvements to enhance pedestrian safety and increase pedestrian accessibility to help meet the goals and targets of the *Caltrans Strategic Management Plan 2015-2020* (Caltrans, March 2015) and *California Transportation Plan 2040* (Caltrans, June 2016). The Caltrans Interim Guide directs lead agencies to consider “multi-modal solutions from existing regional transportation plans, regional plans, transit plans, bicycle plans, and pedestrian plans.”

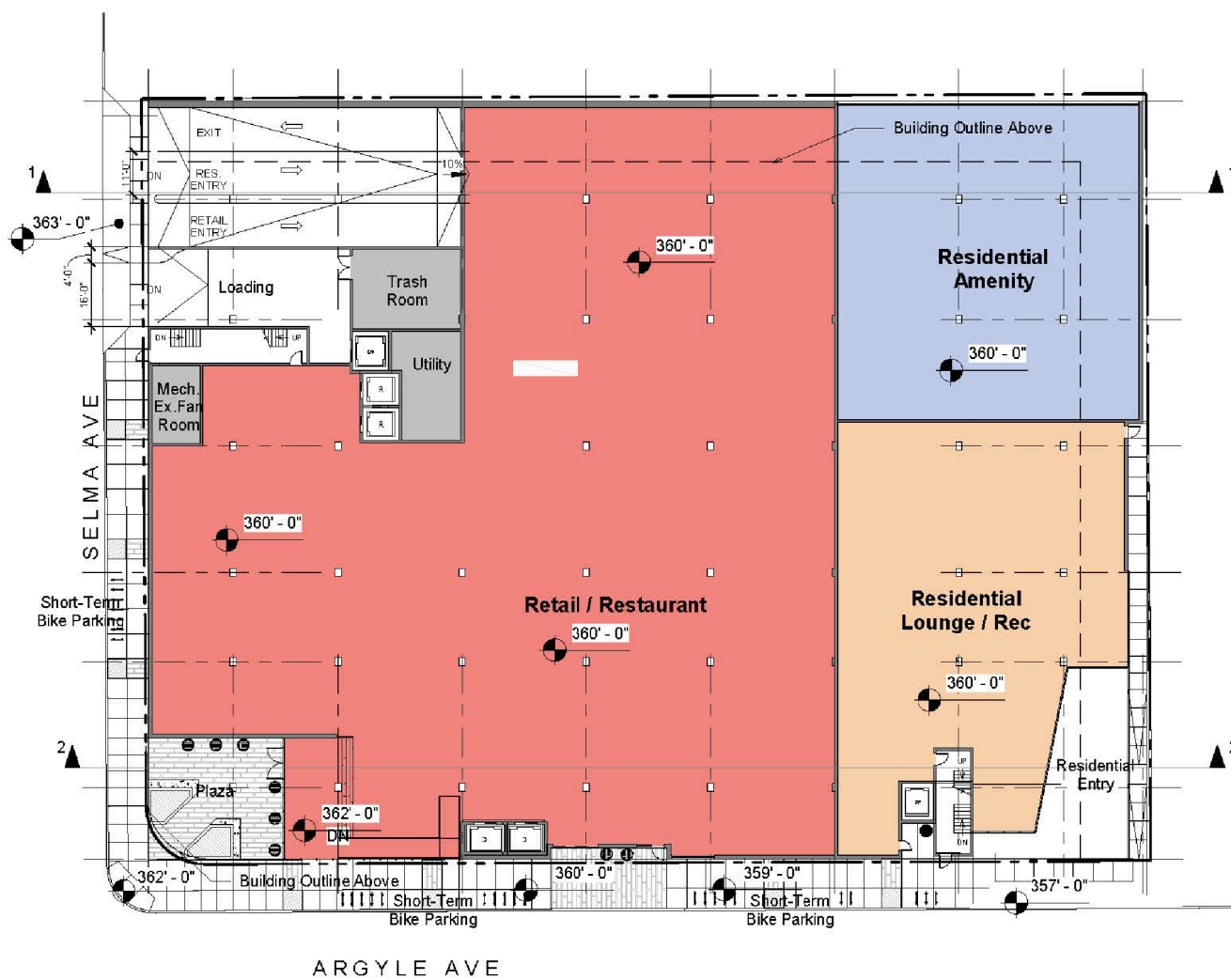
Caltrans facilities were evaluated according to the requirements of the Caltrans Agreement, which identifies a series of screening criteria that, if any are met by the Project, require a more detailed analysis of Caltrans facilities. As described above, based on the Project-related increase on the freeway facilities, the screening criteria would be met, thus requiring further analysis. A supplemental analysis was conducted using HCM methodology and is presented in the Appendices.

Additional Review and Analysis

In addition to the various intersection analyses and the CMP analysis discussed above, this Transportation Impact Study includes a review of various other features and conditions related to the proposed Project. These include a review of Project access and circulation, parking requirements and proposed supply, and an analysis of potential transportation impacts associated with the Project's construction.

ORGANIZATION OF REPORT

This report is divided into 12 chapters, including this introduction. Chapter 2 describes the existing circulation system, traffic volumes, and traffic conditions in the Study Area. Chapter 3 forecasts the Future without Project Conditions. Chapter 4 describes the procedure used to forecast Project traffic volumes and distribution through the Study Area. Chapter 5 presents the intersection operating conditions associated with construction of the Project on top of Existing Conditions. Chapter 6 presents the intersection operating conditions associated with construction of the Project on top of Future without Project Conditions (Year 2023). Chapter 7 presents the unsignalized intersection analysis. Chapter 8 presents the traffic impact analysis should the Project be developed with the Supermarket Option. Chapter 9 presents the regional CMP analysis. Chapter 10 describes site access and internal circulation. Chapter 11 reviews the proposed parking and the City's parking requirement for the Project. Chapter 12 presents the impacts associated with the construction phase of the Project. The Appendices contain supporting documentation and additional details of the technical analyses, as well as the additional analysis described above.

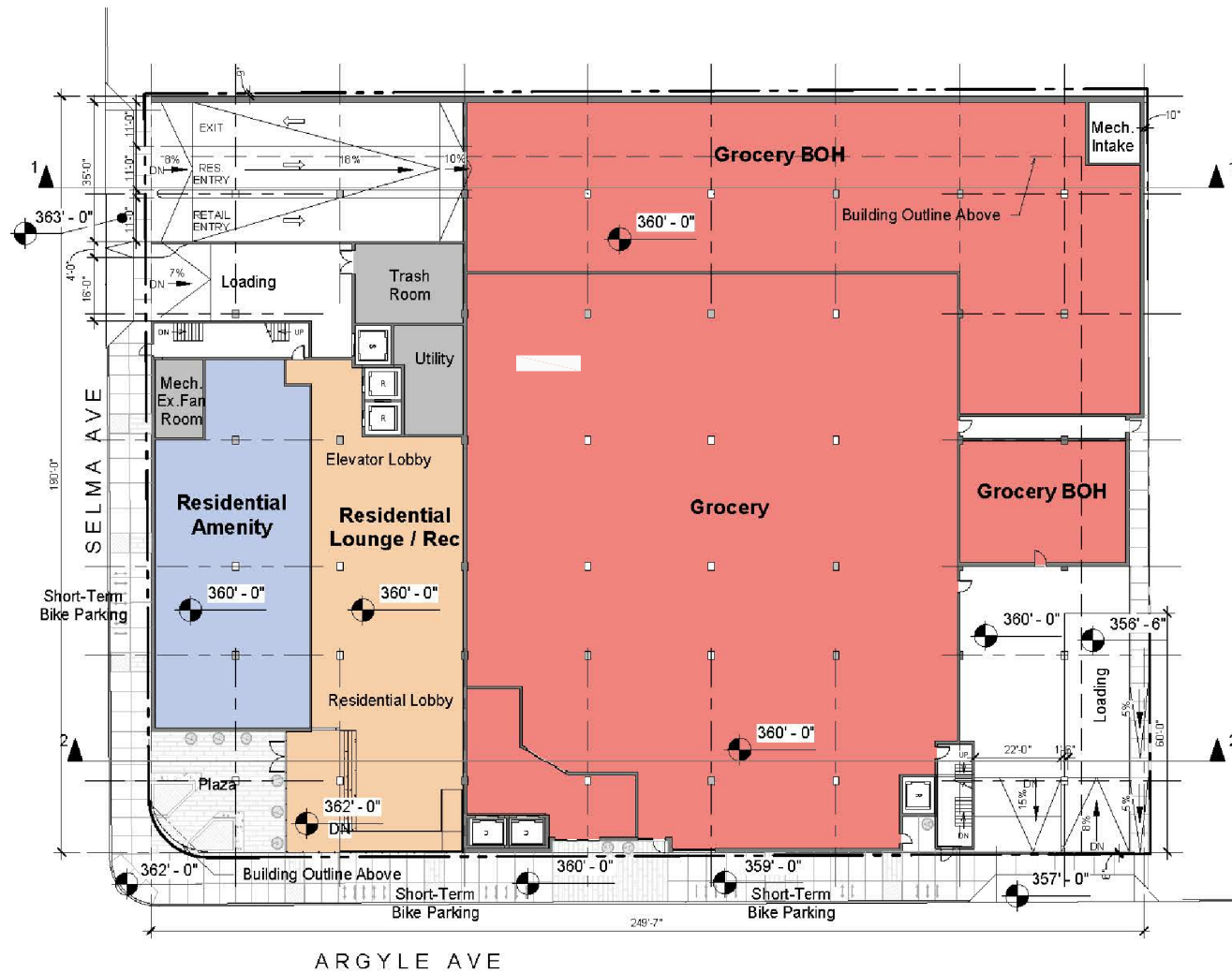


Source: Togawa Smith Martin, Inc., December 2018



SITE PLAN - PROJECT

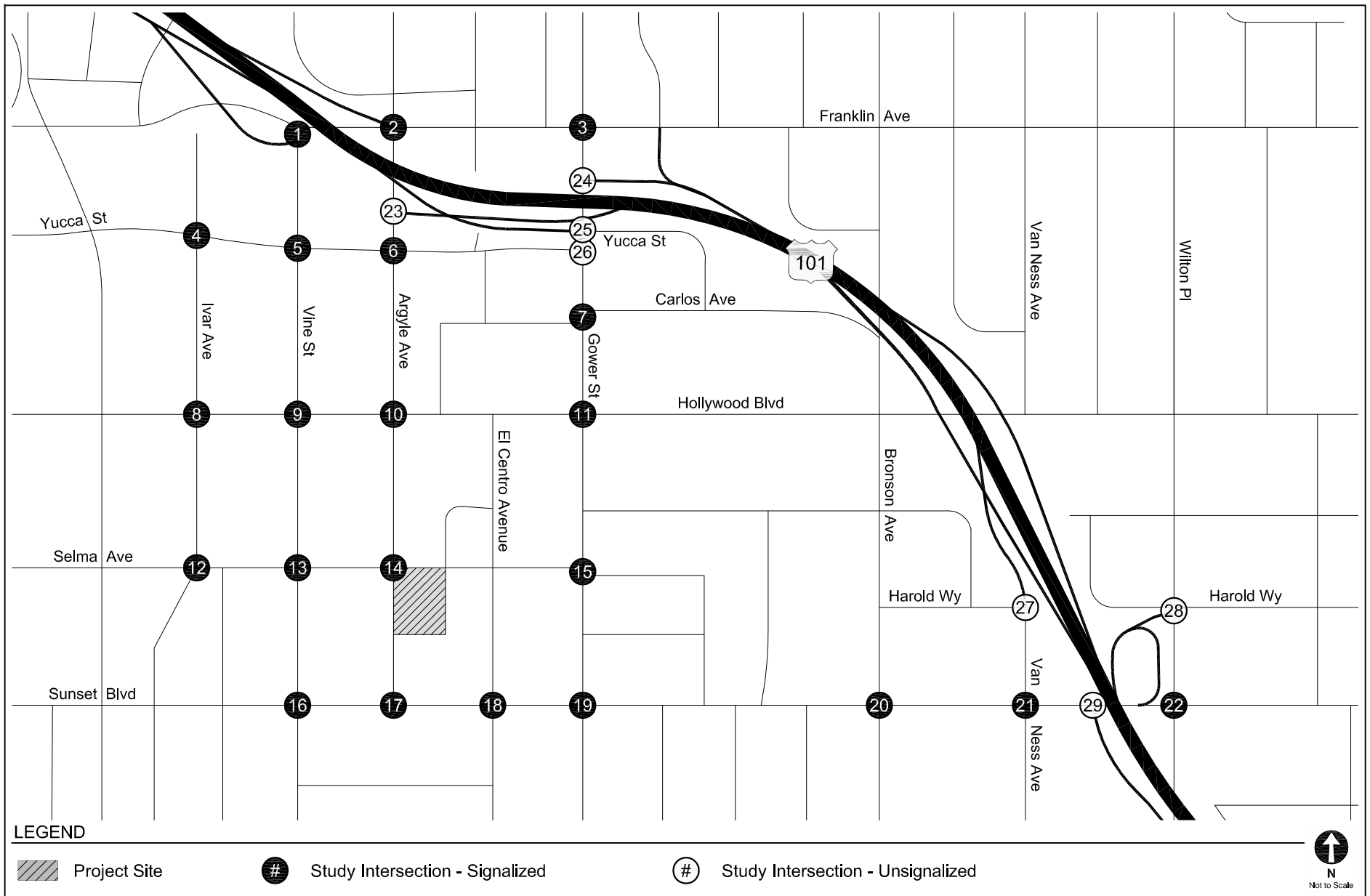
FIGURE
1A



Source: Togawa Smith Martin, Inc., December 2018

SITE PLAN - SUPERMARKET OPTION

FIGURE
1B



**TABLE 1
STUDY INTERSECTIONS**

No	Intersection	Jurisdiction
<i>Signalized Intersections</i>		
1.	Vine Street & Franklin Avenue / US 101 Southbound Off-Ramp	City of Los Angeles / Caltrans
2.	Argyle Avenue / US 101 Northbound On-Ramp & Franklin Avenue	City of Los Angeles / Caltrans
3.	Gower Street & Franklin Avenue	City of Los Angeles
4.	Ivar Avenue & Yucca Street	City of Los Angeles
5.	Vine Street & Yucca Street	City of Los Angeles
6.	Argyle Avenue & Yucca Street	City of Los Angeles
7.	Gower Street & Carlos Avenue	City of Los Angeles
8.	Ivar Avenue & Hollywood Boulevard	City of Los Angeles
9.	Vine Street & Hollywood Boulevard	City of Los Angeles
10.	Argyle Avenue & Hollywood Boulevard	City of Los Angeles
11.	Gower Street & Hollywood Boulevard	City of Los Angeles
12.	Ivar Avenue & Selma Avenue	City of Los Angeles
13.	Vine Street & Selma Avenue	City of Los Angeles
14.	Argyle Avenue & Selma Avenue	City of Los Angeles
15.	Gower Street & Selma Avenue	City of Los Angeles
16.	Vine Street & Sunset Boulevard	City of Los Angeles
17.	Argyle Avenue & Sunset Boulevard	City of Los Angeles
18.	El Centro Avenue & Sunset Boulevard	City of Los Angeles
19.	Gower Street & Sunset Boulevard	City of Los Angeles
20.	Bronson Avenue & Sunset Boulevard	City of Los Angeles
21.	Van Ness Avenue & Sunset Boulevard	City of Los Angeles
22.	Wilton Place & Sunset Boulevard	City of Los Angeles
<i>Unsignalized Intersections</i>		
23.	Argyle Avenue & US 101 Southbound On-Ramp	City of Los Angeles / Caltrans
24.	Gower Street & US 101 Northbound Off-Ramp	City of Los Angeles / Caltrans
25.	Gower Street & US 101 Southbound Off-Ramp / Yucca Street	City of Los Angeles / Caltrans
26.	Gower Street & Yucca Street	City of Los Angeles
27.	US 101 Southbound Off-Ramp / Van Ness Avenue & Harold Way	City of Los Angeles / Caltrans
28.	Wilton Place & Harold Way / US 101 Northbound Off-Ramp	City of Los Angeles / Caltrans
29.	US 101 Southbound On-Ramp & Sunset Boulevard	City of Los Angeles / Caltrans

TABLE 2
LEVEL OF SERVICE DEFINITIONS FOR INTERSECTIONS

Level of Service	Signalized V/C Ratio [a]	Unsignalized V/C Ratio [b]	Definition
A	0.000 - 0.600	0.0 - 10.0	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601 - 0.700	10.1 - 15.0	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 - 0.800	15.1 - 25.0	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 - 0.900	25.1 - 35.0	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 - 1.000	35.1 - 50	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	> 50.0	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Notes

[a] *Transportation Research Circular No. 212, Interim Materials on Highway Capacity*
(Transportation Research Board, 1980).

Chapter 2

Existing Conditions

A comprehensive data collection effort was undertaken to develop a detailed description of existing conditions in the Project Study Area. The Existing Conditions analysis includes an assessment of the existing freeway and street systems, an analysis of traffic volumes and current operating conditions, and an assessment of the existing public transit service, as well as pedestrian and bicycle circulation in year 2017.

STUDY AREA

The Project's transportation analysis Study Area, shown in Figure 2, includes a geographic area that is generally bounded by Franklin Avenue to the north, Wilton Place to the east, Sunset Boulevard to the south, and Ivar Street to the west.

A transportation analysis study area generally comprises those intersections with the greatest potential to experience significant traffic impacts due to the project as defined by the City, including intersections that are:

1. Immediately adjacent or in close proximity to the project site
2. In the vicinity of the project site that are documented to have current or projected future adverse operational issues
3. In the vicinity of the project site that are forecast to experience a relatively greater percentage of project-related vehicular turning movements (e.g., at freeway ramp intersections)

The Project's transportation analysis Study Area was established in consultation with the City, based on the above criteria, as well as peak hour Project trip generation, the anticipated distribution of Project traffic, and the existing intersections/corridor operations. It comprises those intersections with the reasonable potential to experience significant traffic impacts due to the Project.

A total of 29 intersections, including 22 signalized and seven unsignalized, were identified during the MOU process for detailed analysis of the above conditions. The results of the traffic impact analysis detailed in this Transportation Impact Study were reviewed to ensure that all potentially significantly impacted intersections were analyzed, and that the boundary of the Study Area was extended, as necessary, to confirm that there were no significant impacts at or beyond the Study Area periphery. As detailed later in this Transportation Impact Study, the study intersections on the Study Area periphery are not anticipated to be significantly impacted by the Project and, thus, the analyzed locations are considered to be adequate such that no significant impacts are anticipated to occur beyond the transportation analysis Study Area. Figure 2 illustrates the location of the Project Site in relation to the surrounding street system and the 29 study intersections. The existing lane configurations at the analyzed intersections are provided in Appendix B.

EXISTING STREET SYSTEM

The existing street system in the Study Area consists of a regional roadway system including freeways, primary and secondary arterials, and collector and local streets which provide regional, sub-regional, or local access and circulation within the Study Area. These transportation facilities generally provide two to six travel lanes and usually allow parking on either side of the street. Typically, the speed limits range between 25 and 35 miles per hour (mph) on the streets and between 55 and 65 mph on freeways.

Street classifications for roadways within the City of Los Angeles are designated in *Mobility Plan 2035, An Element of the General Plan* (Los Angeles Department of City Planning, January 2016) (the “Mobility Plan”) and *City of Los Angeles Transportation Element of the General Plan* (“1999 Transportation Element of the General Plan”) (Los Angeles Department of City Planning, 1999) previously in effect. The Mobility Plan revised street standards previously outlined in the 1999 Transportation Element of the General Plan in an effort to provide a more enhanced balance between traffic flow and other important street functions including transit routes and stops, pedestrian environments, bicycle routes, building design and site access, etc.

The available facilities in the Study Area are defined by the following in the Mobility Plan:

- Freeways are high-volume, high-speed roadways with limited access provided by interchanges that carry regional traffic through and do not provide local access to adjacent land uses.
- Arterial Streets are major streets that serve through traffic, as well as provide access to major commercial activity centers. Arterials are divided into two categories:
 - Boulevards represent the widest streets that typically provide regional access to major destinations and include two categories:
 - Boulevard I provides up to four travel lanes in each direction with a target operating speed of 40 mph
 - Boulevard II provides up to three travel lanes in each direction with a target operating speed of 35 mph
 - Avenues pass through both residential and commercial areas and include three categories:
 - Avenue I provides up to two travel lanes in each direction with a target operating speed of 35 mph
 - Avenue II provides up to two travel lanes in each direction with a target operating speed of 30 mph
 - Avenue III provides up to two travel lanes in each direction with a target operating speed of 25 mph
- Collector Streets are generally located in residential neighborhoods and provide access to and from arterial streets for local traffic and are not intended for cut-through traffic. They provide one travel lane in each direction with a target operating speed of 25 mph.
- Local Streets are intended to accommodate lower volumes of vehicle traffic and provide parking on both sides of the street. They provide one travel lane in each direction with a target operating speed of 15 to 20 mph. Local streets include two categories:
 - Continuous local streets connect to other streets at both ends
 - Non-continuous local streets lead to a dead-end

The Mobility Plan is currently under litigation that could potentially result in its nullification. In that scenario, the 1999 Transportation Element of the General Plan would once more be in effect. Arterial streets are designated as the following in the 1999 Transportation Element of the General Plan:

-
- Arterial Streets are major streets that serve through traffic, as well as provide access to major commercial activity centers. Arterials are divided into three categories: Major Class Highway I, Major Class Highway II, and Secondary Highway.
 - Major Highway Class I has average daily traffic (ADT) of more than 50,000.
 - Major Highway Class II is typically spaced one mile apart in a grid system, with an ADT of 30,000 to 50,000.
 - Secondary Highway supplements the through-traffic characteristics of major highways and typically located one mile apart midway between major highways, with an ADT of 20,000 to 30,000.

Primary regional access to the Project Site is provided by US 101. The major arterials providing regional and sub-regional access to the traffic analysis Study Area include Hollywood Boulevard and Sunset Boulevard. The following is a brief description of the major roadways in the traffic analysis Study Area, including their classification under both the Mobility Plan and the 1999 Transportation Element of the General Plan:

Freeways

- US 101 – US 101 generally runs in the northwest-southeast direction and is located less than 0.50 mile north of the Project Site. In the vicinity of the Study Area, US 101 provides four travel lanes in each direction. Access to and from US 101 is available via interchanges at Vine Street, Argyle Avenue, Franklin Avenue, Gower Street, Hollywood Boulevard, and Sunset Boulevard.

Roadways

- Ivar Avenue – Ivar Avenue is a designated Local Street in both the Mobility Plan and the 1999 Transportation Element of the General Plan. It travels in the north-south direction and is located west of the Project Site. It generally provides two travel lanes, one lane in each direction. Two-hour metered parking is generally provided on both sides of the street within the Study Area.
- Vine Street – Vine Street is a designated Avenue II in the Mobility Plan and a designated Major Highway Class II in the 1999 Transportation Element of the General Plan. It travels in the north-south direction and is located west of the Project Site. It generally provides four travel lanes, two lanes in each direction, and left-turn lanes at most intersections. One-hour and two-hour metered and unmetered parking is generally provided on both sides of the street within the Study Area.
- Argyle Avenue – Argyle Avenue is a designated Local Street in both the Mobility Plan and the 1999 Transportation Element of the General Plan. It travels in the north-south direction and is located adjacent to the western boundary of the Project Site. It generally

provides two travel lanes, one lane in each direction, and left-turn lanes at most intersections. One-hour and two-hour metered parking is generally provided on both sides of the street within the Study Area.

- Gower Street – Gower Street is a designated Avenue III in the Mobility Plan and a designated Secondary Highway in the 1999 Transportation Element of the General Plan. It travels in the north-south direction and is located east of the Project Site. It generally provides two travel lanes, one lane in each direction, and left-turn lanes at most intersections. One-hour metered parking with afternoon peak hour restrictions is generally available on the west side of the street and one-hour metered parking with morning and afternoon peak hour restrictions is generally available on the east side of the street between Hollywood Boulevard and Sunset Boulevard. Unmetered parking is generally provided on both sides of the street north of Hollywood Boulevard and south of Sunset Boulevard within the Study Area.
- Bronson Avenue – Bronson Avenue is a designated Avenue III in the Mobility Plan and a designated Secondary Highway in the 1999 Transportation Element of the General Plan. It travels in the north-south direction and is located east of the Project Site. It generally provides two travel lanes, one lane in each direction, and left-turn lanes at most intersections. Two-hour unmetered parking is generally available on the west side of the street and unmetered parking is generally available on the east side of the street between Franklin Avenue and Yucca Street. Unmetered parking is generally provided on both sides of the street south of Yucca Street within the Study Area.
- Van Ness Avenue – Van Ness Avenue is a designated Collector Street south of US 101 and a Local Street north of US 101 in both the Mobility Plan and the 1999 Transportation Element of the General Plan. It travels in the north-south direction and is located east of the Project Site. It generally provides two travel lanes, one lane in each direction, and left-turn lanes at most intersections. Two-hour unmetered parking is generally available on the west side of the street and unmetered parking is generally provided on the east side of the street within the Study Area.
- Wilton Place – Wilton Place is a designated Avenue III in the Mobility Plan and a designated Secondary Highway in the 1999 Transportation Element of the General Plan. It travels in the north-south direction and is located east of the Project Site. It generally provides two to four travel lanes, one to two lanes in each direction, and left-turn lanes at most intersections. Unmetered parking is generally available on both sides of the street north of Hollywood Boulevard. Unmetered parking with peak hour restrictions is generally provided on both sides of the street south of Hollywood Boulevard within the Study Area.
- Franklin Avenue – Franklin Avenue is a designated Avenue II east of Cahuenga Boulevard and a designated Avenue III west of Cahuenga Boulevard in the Mobility Plan and a designated Secondary Highway in the 1999 Transportation Element of the General Plan. It travels in the east-west direction and is located north of the Project Site. It generally provides two to four travel lanes, one to two lanes in each direction, and left-turn lanes at most intersections. Both one-hour unmetered and unrestricted curbside parking is generally provided on the south side of the street east of Ivar Avenue within the Study Area.

-
- Yucca Street – Yucca Street is a designated Local Street east of Vine Street and a designated Avenue II between Cahuenga Boulevard and Vine Street in the Mobility Plan and a designated Local Street east of Vine Street and a designated a Secondary Highway between Cahuenga Boulevard and Vine Street in the 1999 Transportation Element of the General Plan. It travels in the east-west direction and is located north of the Project Site. It generally provides two travel lanes, one lane in each direction, and left-turn lanes at most intersections. Two-hour metered parking is generally provided on both sides of the street within the Study Area.
 - Carlos Avenue – Carlos Avenue is a designated Local Street in both the Mobility Plan and the 1999 Transportation Element of the General Plan. It travels in the east-west direction and is located north of the Project Site. It generally provides two travel lanes, one lane in each direction. Unmetered parking is generally provided on both sides of the street within the Study Area.
 - Hollywood Boulevard – Hollywood Boulevard is a designated Avenue I east of La Brea Avenue in the Mobility Plan and a designated Major Highway Class II in the 1999 Transportation Element of the General Plan. It travels in the east-west direction and is located north of the Project Site. It generally provides four travel lanes, two lanes in each direction, and left-turn lanes at most intersections. Two-hour metered parking is generally available on both sides of the street within the Study Area.
 - Selma Avenue – Selma Avenue is a designated Local Street in both the Mobility Plan and the 1999 Transportation Element of the General Plan. It travels in the east-west direction and is located adjacent to the northern boundary of the Project Site. It generally provides two travel lanes, one lane in each direction. Two-hour metered parking is generally provided on both sides of the street within the Study Area.
 - Sunset Boulevard – Sunset Boulevard is a designated Avenue I in the Mobility Plan and a designated Major Highway Class II in the 1999 Transportation Element of the General Plan. It travels in the east-west direction and is located south of the Project Site. It generally provides four to six travel lanes, two to three lanes in each direction, and left-turn lanes at most intersections. One-hour metered parking with peak hour restrictions is generally provided on both sides of the street within the Study Area. Parking is prohibited during the morning and afternoon commuter peak periods.

EXISTING TRANSIT SYSTEM

The Project area is served by bus lines operated by Metro and DASH. Figure 3 illustrates the existing transit service in the Study Area. The following provides a brief description of the bus lines providing service in the Project vicinity:

-
- Metro Local 2 – Route 2 is a local line that travels from downtown Los Angeles to Pacific Palisades via Sunset Boulevard, with average headways of 10 to 15 minutes during the weekday morning and afternoon peak hours. This line provides service to Hollywood, West Hollywood, and Westwood and travels along Sunset Boulevard in the vicinity of the Project Site.
 - Metro Local 180/181 – Route 180/181 is a local line that travels from Hollywood to Altadena via Los Feliz Boulevard and Colorado Boulevard, with average headways of approximately 20 to 35 minutes during the weekday morning and afternoon peak hours. This line provides service to Pasadena, Eagle Rock, and Glendale and travels along Hollywood Boulevard in the vicinity of the Project Site.
 - Metro Local 210 – Route 210 is a local line that travels from Hollywood to Redondo Beach via Crenshaw Boulevard, with average headways of 15 to 20 minutes during the weekday morning and afternoon peak hours. This line provides service to Torrance, the Metro Green Line Crenshaw Station, and the Metro Expo Line Expo/Crenshaw Station and travels along Vine Street in the vicinity of the Project Site.
 - Metro Local 212 – Route 212 is a local line that travels from the Metro Red Line Hollywood/Vine Station to the Metro Green Line Hawthorne/Lennox Station via La Brea Avenue, with average headways of 15 to 20 minutes during the weekday morning and afternoon peak hours. This line provides service to Miracle Mile, Baldwin Hills, and Inglewood. It travels along Hollywood Boulevard in the vicinity of the Project Site.
 - Metro Local 217 – Route 217 is a local line that travels from Vermont Avenue & Sunset Boulevard to Fairfax Avenue & Washington Boulevard, with average headways of 15 to 20 minutes during the weekday morning and afternoon peak hours. This line provides service to Los Feliz, Hollywood, and Culver City and travels along Hollywood Boulevard in the vicinity of the Project Site.
 - Metro Local 222 – Route 222 is a local line that travels from Sunland to Hollywood via Hollywood Way, Barham Boulevard, and Cahuenga Boulevard, with average headways of 40 minutes during the weekday morning and afternoon peak hours. This line provides service to Sun Valley, Burbank, and Universal City and travels along Hollywood Boulevard in the vicinity of the Project Site.
 - Metro Rapid 780 – Route 780 is a rapid line that travels from Washington Boulevard & Fairfax Avenue to Pasadena via Fairfax Avenue and Hollywood Boulevard, with average headways of 15 minutes during the weekday morning and afternoon peak hours. This line provides service to Los Feliz, Glendale, and Eagle Rock and travels along Hollywood Boulevard in the vicinity of the Project Site.
 - DASH Beachwood Canyon – DASH Beachwood Canyon is a local line that travels from the Metro Red Line Hollywood/Vine Station to Beachwood Drive & Westshire Drive, with average headways of 25 minutes during the weekday morning and afternoon peak hours. This line provides service to Beachwood Canyon and Hollywood and travels along Vine Street in the vicinity of the Project Site.
 - DASH Hollywood – DASH Hollywood is a local line that travels from Argyle Avenue & Hollywood Boulevard to Santa Monica Boulevard & Vermont Avenue via Hollywood

Boulevard and Fountain Avenue, with average headways of 30 minutes during the weekday morning and afternoon peak hours. This line provides service to the Metro Red Line Vermont/Sunset, Vermont/Santa Monica, and Hollywood/Vine Stations and travels along Sunset Boulevard in the vicinity of the Project Site.

- DASH Hollywood/Wilshire – DASH Hollywood/Wilshire is a local line that travels from the Metro Purple Line Wilshire/Western Station to the Metro Red Line Hollywood/Vine Station, with average headways of 25 to 30 minutes during the weekday morning and afternoon peak hours. This line provides service to Koreatown and Hollywood and travels along Gower Street in the vicinity of the Project Site.

In addition to the bus lines that provide service within the Project Site vicinity, the Metro Red Line subway operates in the Study Area. The Metro Red Line runs between North Hollywood and downtown Los Angeles, connecting with the Metro Orange Line in North Hollywood, the Metro Purple Line at Wilshire Boulevard, the Metro Blue Line and Metro Expo Line in downtown Los Angeles, and the Metro Gold Line at Union Station. In the Project vicinity, the Metro Red Line has a station at Hollywood Boulevard & Vine Street, approximately 0.25 miles from the Project Site.

Table 3 summarizes the transit lines operating in the Study Area for each of the service providers in the region, the type of service (peak vs. off-peak, express vs. local), and frequency of service, as described above. The average frequency of transit service during the peak hour was derived from the number of peak period stops made at the stop nearest the Project Site.

Table 4 summarizes the total capacity of the Metro and DASH transit systems during the morning and afternoon peak hours based on the frequency of service of each line and the maximum seated and standing capacity of each bus or train. As shown in Table 4, the Metro and DASH bus lines within the Study Area currently provide capacity for 2,361 transit trips during the morning peak hour and 2,263 transit trips during the afternoon peak hour. Additionally, the Metro Red Line provides capacity for an additional 4,632 transit trips during the morning peak hour and 3,588 trips during the afternoon peak hour. In total, the public transit system in the Study Area has a capacity of approximately 6,993 transit trips during the morning peak hour and 5,851 transit trips during the afternoon peak hour.

BICYCLE AND PEDESTRIAN NETWORK

Existing Bicycle System

Based on *2010 Bicycle Plan, A Component of the City of Los Angeles Transportation Element* (Los Angeles Department of City Planning, 2010) (the 2010 Bicycle Plan), the existing bicycle system in the Study Area consists of a limited coverage of bicycle routes (Class III), sharrows (shared lane markings), and a Bicycle Friendly Street (a street which has been enhanced with traffic calming or other bicycle-friendly features). The following bicycle facilities are provided along corridors within the Study Area:

Bicycle Routes (Class III)

- Vine Street between Yucca Street and Wilshire Boulevard
- Argyle Avenue between Franklin Avenue and Selma Avenue
- Van Ness Avenue between Fountain Avenue and La Mirada Avenue
- Franklin Avenue between Argyle Avenue and St. George Street
- Yucca Street between Highland Avenue and Argyle Avenue
- Selma Avenue between Highland Avenue and Bronson Avenue
- Selma Avenue between Highland Avenue and Gower Street

Sharrows

- Franklin Avenue east of Argyle Avenue
- Yucca Street between Vine Street and Argyle Avenue
- Selma Avenue
- Vine Street south of Yucca Street
- Argyle Avenue between Franklin Avenue and Selma Avenue

Bicycle Friendly Street

- Yucca Street west of Vine Street is a designated Bicycle Friendly Street

Similar to the street designations of the General Plan, the bicycle facilities of the 2010 Bicycle Plan have been re-designated with the adoption of the Mobility Plan. The components of the 2010 Bicycle Plan have been incorporated into the bicycle network of the Mobility Plan, which

consists of a Low-Stress Bikeway System and a Bicycle Lane Network. The Low-Stress Bikeway System is comprised of the Bicycle Enhanced Network, the Neighborhood Enhanced Network, and Bicycle Paths. The Bicycle Enhanced Network includes protected bicycle lanes and neighborhood streets. Bicycle lanes could provide infrastructure including cycle tracks, bicycle signals, and demarcated areas to facilitate turns at intersections. Neighborhood streets would typically provide mini-roundabouts, cross-street stop signs, crossing islands at major intersection crossings, improved street lighting, bicycle boxes, and bicycle-only left-turn pockets. The Neighborhood Enhanced Network and Bicycle Paths are relatively unchanged from the 2010 Bicycle Plan.

Existing Pedestrian Facilities

The walkability of existing facilities is based on the availability of pedestrian routes necessary to accomplish daily tasks without the use of an automobile; these attributes are quantified by WalkScore.com and assigned a score out of 100 points. With the various commercial businesses and cultural facilities adjacent to residential neighborhoods of the Hollywood district, the walkability of the Project Site is 93 out of 100 points¹. There are wide sidewalks lining the streets, crosswalks available at the intersections, and many shops, restaurants, and other services within walking distance of the Project Site.

The sidewalks that serve as routes to the Project Site provide proper connectivity and adequate widths for a comfortable and safe pedestrian environment. The sidewalks provide connectivity to pedestrian crossings at intersections within the Study Area. The following signalized intersections provide pedestrian facilities to the Project Site (all intersections have marked pedestrian crossings on all approaches):

- Argyle Avenue & Sunset Boulevard
- Argyle Avenue & Selma Avenue
- Vine Street & Selma Avenue

¹ Walk Score (www.walkscore.com) rates the Project Site (1546 Argyle Avenue) with a score of 93 of 100 possible points (scores accessed on May 18, 2017). Walk Score calculates the walkability of specific addresses by taking into account the ease of living in the neighborhood with a reduced reliance on automobile travel.

Each of the listed signalized intersections provides pedestrian phasing, crosswalk striping, and Americans with Disabilities Act wheelchair ramps.

Vision Zero

As described in *Vision Zero: Eliminating Traffic Deaths in Los Angeles by 2025* (City of Los Angeles, August 2015), Vision Zero is a traffic safety policy that promotes strategies to eliminate collisions that result in severe injury or death. Vision Zero has identified the High Injury Network, a network of streets based on the collision data from the last five years, where strategic investments will have the biggest impact in reducing death and severe injury. None of the streets adjacent to the Project Site have been identified as part of the High Injury Network; however, the following nearby streets within the Study Area have been identified:

- Hollywood Boulevard
- Selma Avenue between Schrader Boulevard and Vine Street
- Sunset Boulevard
- Vine Street
- Franklin Avenue east of Beachwood Drive
- Yucca Street west of Argyle Avenue

EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

This section presents the existing peak hour turning movement traffic volumes for the intersections analyzed in the study, describes the methodology used to assess the traffic conditions at each intersection, and analyzes the resulting operating conditions at each intersection indicating V/C ratios or delay and LOS.

Existing Traffic Volumes

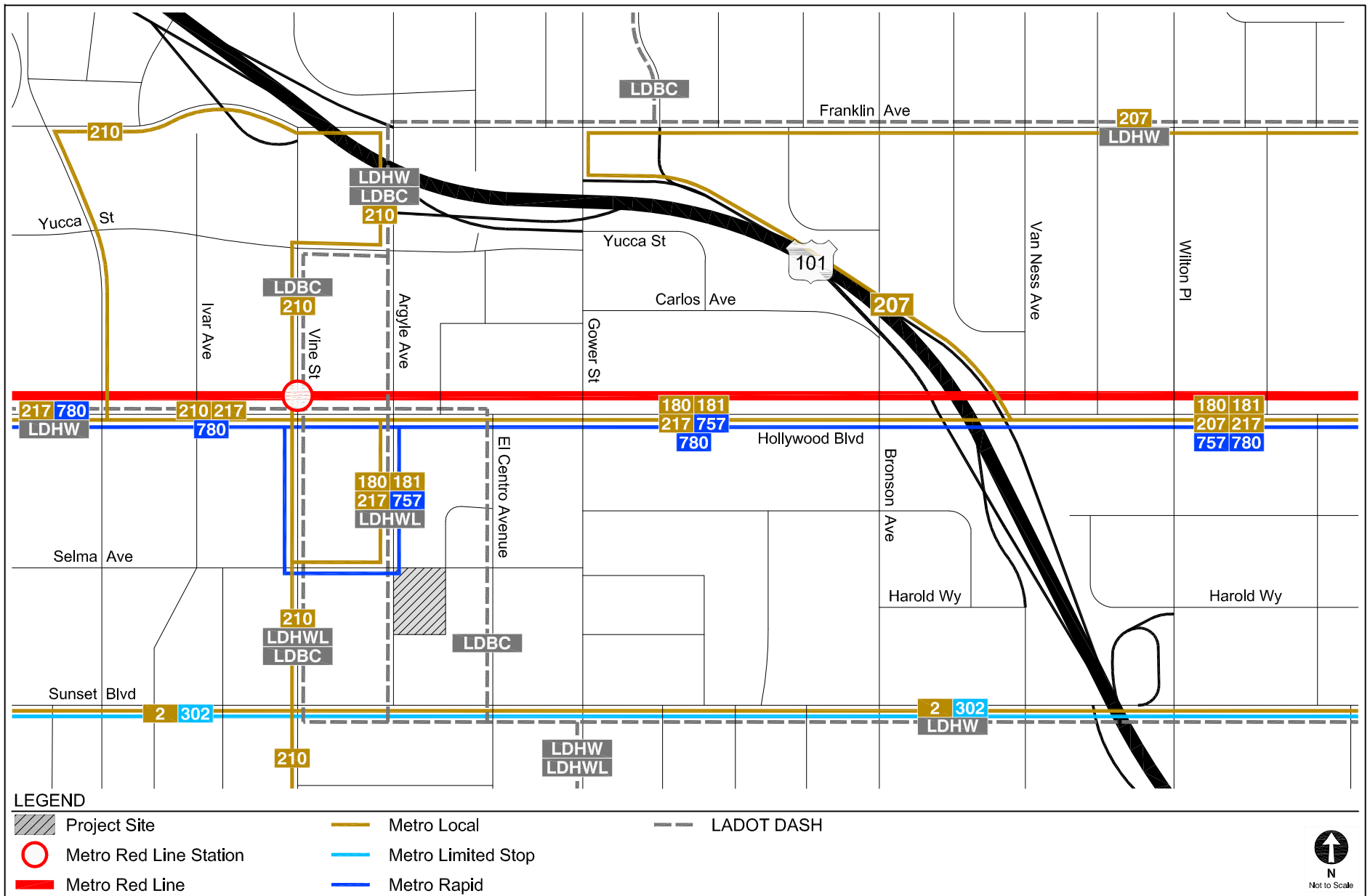
Intersection turning movement counts were conducted at the 29 study intersections during the weekday morning (7:00 AM to 10:00 AM) and afternoon (3:00 PM to 6:00 PM) peak periods in

May 2015, November 2016, and December 2016 in accordance with LADOT guidelines. Traffic counts from August 2013 were utilized at the intersection of Vine Street & Selma Avenue (Intersection #13) due to recent on-going construction activities adjacent to the intersection that were affecting typical traffic operations. The traffic counts at all locations were grown by 1% per year to reflect Existing Year 2017 Conditions. Local schools were in session when all traffic counts were conducted and the weather conditions were typical. The existing intersection peak hour traffic volumes are illustrated in Figure 4. Traffic count worksheets are provided in Appendix C.

Existing Intersection Levels of Service

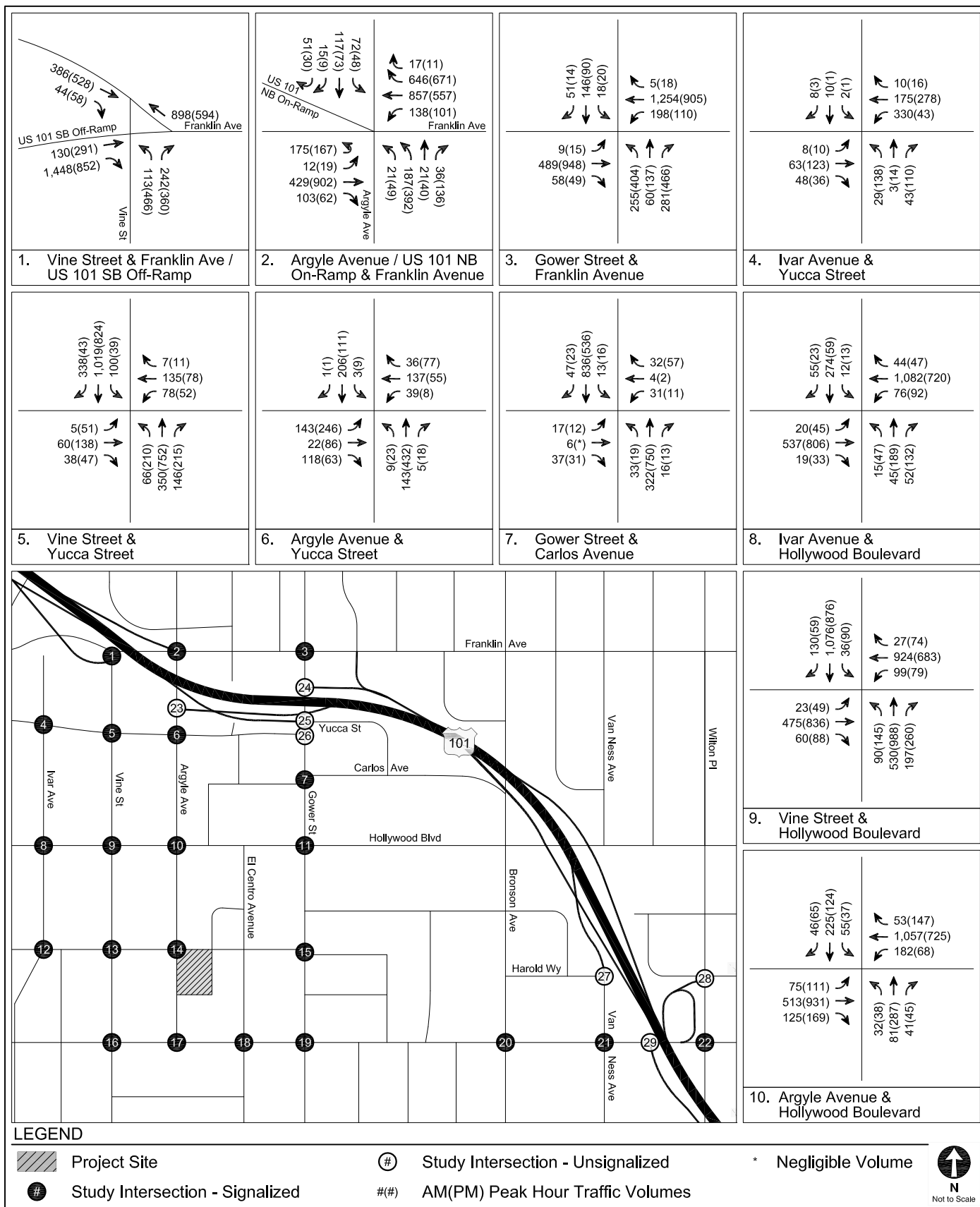
Table 5 summarizes the weekday morning and afternoon peak hour LOS results for each of the signalized study intersections under Existing Conditions, accounting for the 10% capacity increase to reflect ATSAC and ATCS control. Based on observations of existing intersection operations, it is recognized that the CMA methodology for individual intersections along major arterials does not in every case account for vehicular queues, pedestrian conflicts, etc. Thus, the calculated average operating conditions may appear better than is observed.

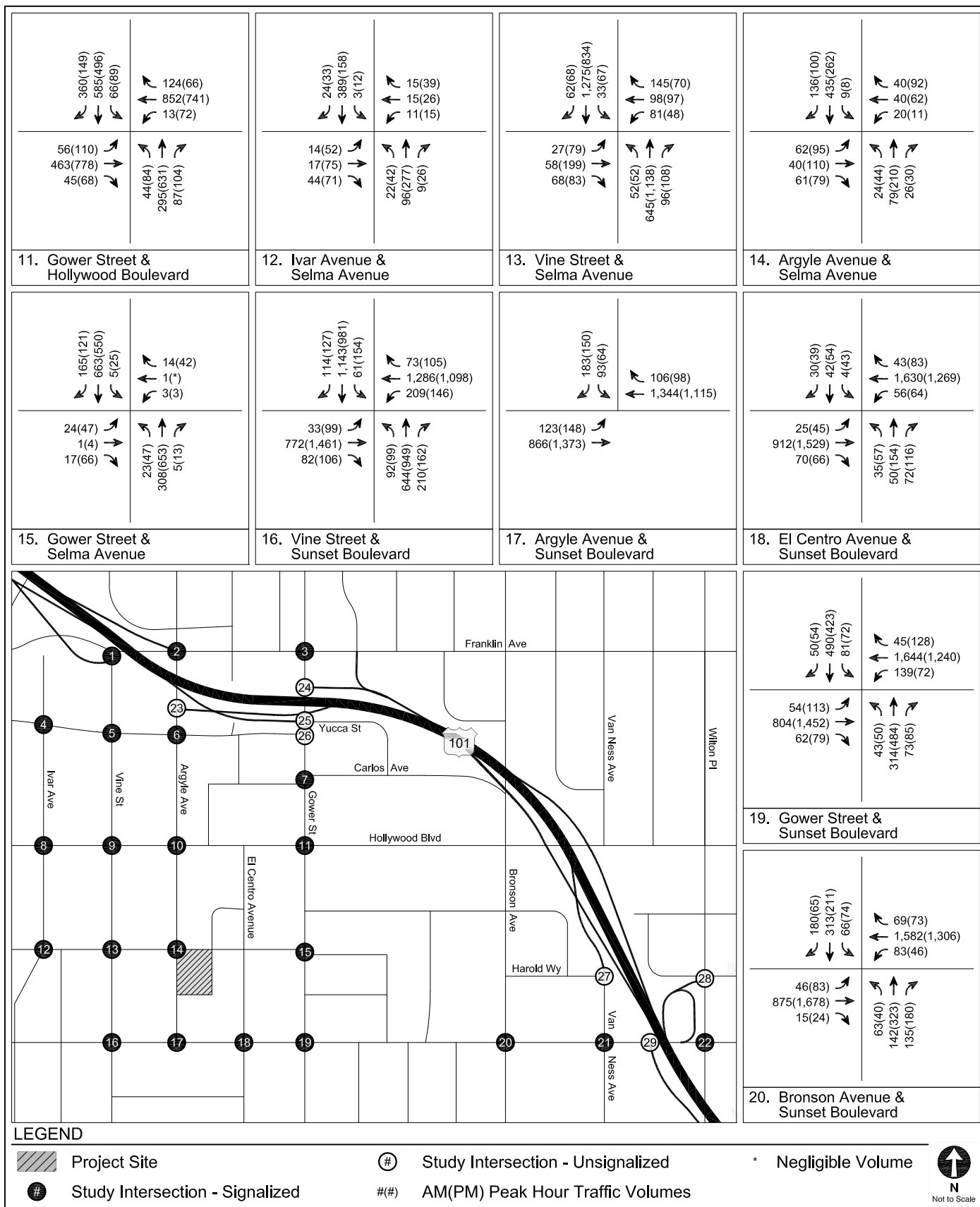
To provide a more conservative analysis, the LOS presented in Table 5 reflects observed conditions in order to provide a worst-case analysis of Project impacts at two of the 22 signalized study intersections – Vine Street & Hollywood Boulevard (Intersection #9) and Vine Street & Sunset Boulevard (Intersection #16). As shown in Table 5, all 22 signalized study intersections currently operate at LOS D or better during both the morning and afternoon peak hours. The LOS calculation worksheets are provided in Appendix D. A detailed analysis of the seven unsignalized study intersections is presented in Chapter 9.



EXISTING TRANSIT SERVICE SERVING THE STUDY AREA

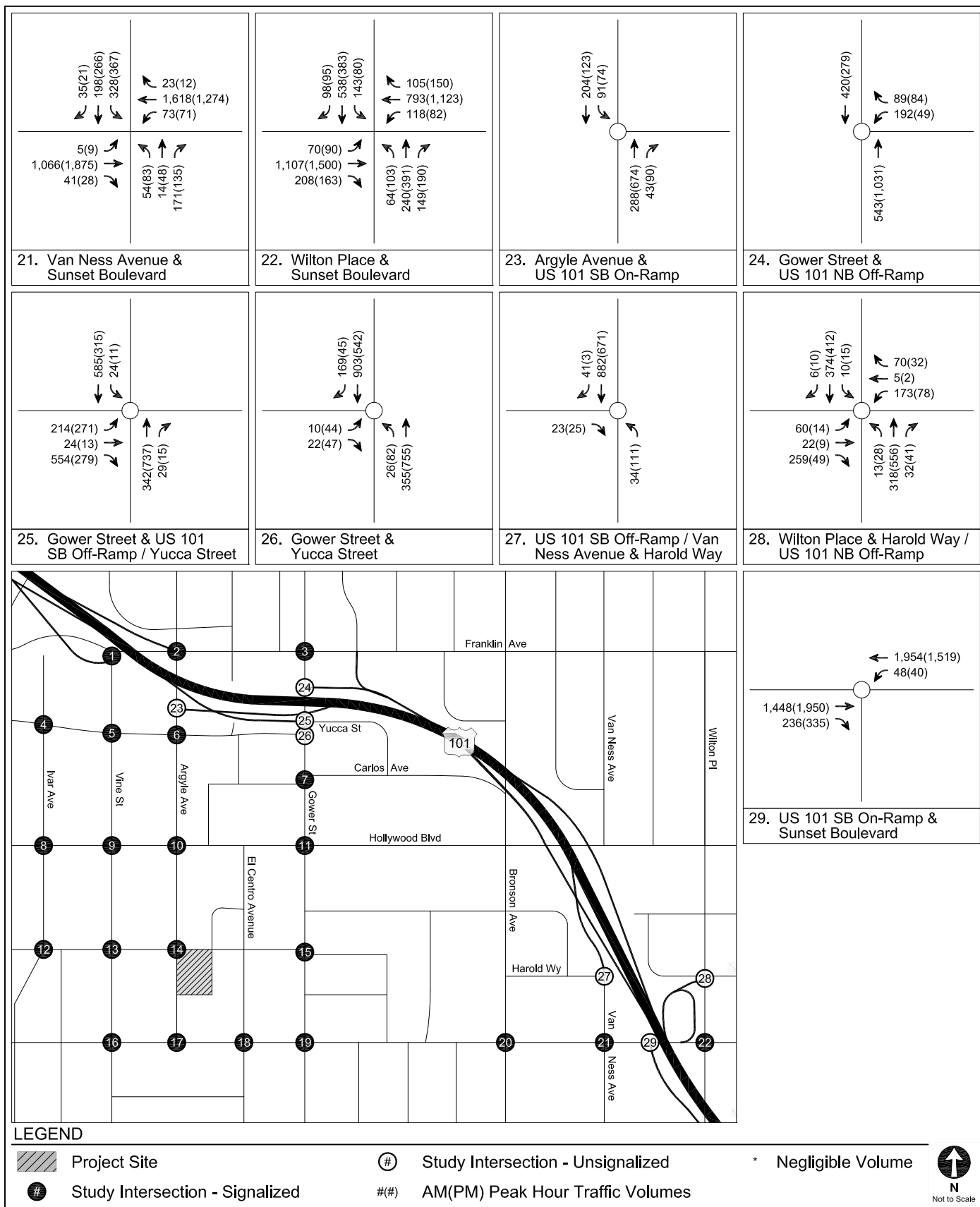
FIGURE
3





EXISTING CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4 (CONT.)



EXISTING CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4 (CONT.)

**TABLE 3
EXISTING TRANSIT SERVICE IN STUDY AREA**

Provider, Route, and Service Area	Service Type	Hours of Operation	Average Headway (minutes)			
			AM Peak Hour		PM Peak Hour	
Metro Bus Service			NB/EB	SB/WB	NB/EB	SB/WB
2 Downtown Los Angeles - Pacific Palisades via Sunset Boulevard	Local	5:15 A.M. - 2:00 A.M.	13	11	10	10
180 Hollywood - Glendale - Pasadena via Los Feliz Boulevard & Colorado Boulevard	Local	5:00 A.M. - 12:00 A.M.	20	22	18	17
181 Hollywood - Glendale - Pasadena via Los Feliz Boulevard & Colorado Boulevard	Local	5:00 A.M. - 12:00 A.M.	34	34	34	30
210 Hollywood & Vine Metro Red Line Station - South Bay Galleria via Crenshaw Boulevard	Local	5:00 A.M. - 1:30 A.M.	17	18	17	17
212 Hollywood/Vine Station - Hawthorne/Lennox Station via La Brea Avenue	Local	4:45 A.M. - 7:30 P.M.	12	16	22	16
217 Vermont & Sunset - Culver City Transit Center via Hollywood Boulevard - Fairfax Avenue - La Cienega Boulevard	Local	24-Hour	17	15	13	15
222 Sunland - Hollywood via Hollywood Way, Barham Boulevard & Cahuenga Boulevard	Local	4:30 A.M. - 1:15 A.M.	34	48	40	40
780 Washington & Fairfax - Pasadena via Fairfax Avenue, Hollywood Boulevard & Colorado Boulevard	Rapid	6:00 A.M. - 7:30 P.M.	13	15	13	14
LADOT DASH Bus Service			NB/EB	SB/WB	NB/EB	SB/WB
BC Beachwood Canyon	Local	6:30 A.M. - 7:45 P.M.	26	26	24	24
HW Hollywood	Local	7:00 A.M. - 7:00 P.M.	30	30	30	30
HWL Hollywood / Wilshire	Local	7:00 A.M. - 7:00 P.M.	23	23	27	27
Metro Rail Service			NB/EB	SB/WB	NB/EB	SB/WB
Red Downtown Los Angeles - North Hollywood	Rail	4:30 A.M. - 2:00 A.M.	10	10	10	10

Notes

Metro: Los Angeles County Metropolitan Transportation Authority

LADOT DASH: Los Angeles Department of Transportation Downtown Area Shuttle

**TABLE 4
EXISTING TRANSIT SERVICE PATRONAGE
LINES SERVING PROJECT PERIPHERY**

AM Peak Period							
Provider	Route	Number of Runs During Peak Hour [a]	Capacity [b]	Average Load [c]	Load Factor (Average Load / Capacity)	Residual Capacity per Run	Residual Capacity in Peak Hour [d]
Metro	2	10	50	29	0.58	21	210
	180 - 181	6	50	6	0.12	44	264
	210	7	50	8	0.16	42	294
	212	9	50	1	0.02	49	441
	217	8	50	1	0.02	49	392
	222	3	50	16	0.32	34	102
	780	9	75	19	0.25	56	504
LADOT Dash	BC	4	30	2	0.07	28	112
	HW	3	30	16	0.53	14	42
	HWL	4	30	34	1.13	0	0
Total Residual Capacity in Peak Hour - Bus Line							2,361
Metro	Red	12	750	364	0.49	386	4,632
Total Residual Capacity in Peak Hour - Rail Line							4,632
PM Peak Period							
Provider	Route	Number of Runs During Peak Hour [a]	Capacity [b]	Average Load [c]	Load Factor (Average Load / Capacity)	Residual Capacity per Run	Residual Capacity in Peak Hour [d]
Metro	2	11	50	31	0.62	19	209
	180 - 181	6	50	11	0.22	39	234
	210	7	50	13	0.26	37	259
	212	7	50	1	0.02	49	343
	217	9	50	2	0.04	48	432
	222	3	50	11	0.22	39	117
	780	9	75	21	0.28	54	486
LADOT Dash	BC	5	30	7	0.23	23	115
	HW	4	30	30	1.00	0	0
	HWL	4	30	13	0.43	17	68
Total Residual Capacity in Peak Hour - Bus Line							2,263
Metro	Red	12	750	451	0.60	299	3,588
Total Residual Capacity in Peak Hour - Rail Line							3,588

Notes:

Metro: Los Angeles County Metropolitan Transportation Authority.

[a] Number of runs in both directions combined during peak hour.

[b] Capacity assumptions based on discussions with agencies:

Metro Regular Bus - 40 seated / 50 seated and standing.

Metro Articulated Bus - 66 seated / 75 seated and standing.

Metro Red Line - 55 seats / car, 6 cars / run during peak periods. Metro assumes a maximum capacity of 230% of seated capacity, or approximately 125 / car.

LADOT DASH - 25 seated / 30 seated and standing.

[c] Average Load is the average number of people per bus in the peak direction based on ridership data provided by Metro, November 2016.

[d] Residual capacity in peak hours = (Residual capacity per run) x (number of peak hour runs).

TABLE 5
EXISTING CONDITIONS
SIGNALIZED INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Existing Conditions	
			V/C	LOS
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM	0.318	A
		PM	0.373	A
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM	0.739	C
		PM	0.747	C
3.	Gower Street & Franklin Avenue	AM	0.653	B
		PM	0.732	C
4.	Ivar Avenue & Yucca Street	AM	0.213	A
		PM	0.267	A
5.	Vine Street & Yucca Street	AM	0.489	A
		PM	0.456	A
6.	Argyle Avenue & Yucca Street	AM	0.187	A
		PM	0.316	A
7.	Gower Street & Carlos Avenue	AM	0.332	A
		PM	0.259	A
8.	Ivar Avenue & Hollywood Boulevard	AM	0.526	A
		PM	0.495	A
9.	Vine Street & Hollywood Boulevard	AM	0.736	D *
		PM	0.679	D *
10.	Argyle Avenue & Hollywood Boulevard	AM	0.491	A
		PM	0.481	A
11.	Gower Street & Hollywood Boulevard	AM	0.682	B
		PM	0.629	B
12.	Ivar Avenue & Selma Avenue	AM	0.249	A
		PM	0.280	A
13.	Vine Street & Selma Avenue	AM	0.561	A
		PM	0.544	A
14.	Argyle Avenue & Selma Avenue	AM	0.405	A
		PM	0.344	A
15.	Gower Street & Selma Avenue	AM	0.563	A
		PM	0.540	A
16.	Vine Street & Sunset Boulevard	AM	0.784	D *
		PM	0.861	D *
17.	Argyle Avenue & Sunset Boulevard	AM	0.385	A
		PM	0.319	A
18.	El Centro Avenue & Sunset Boulevard	AM	0.396	A
		PM	0.544	A
19.	Gower Street & Sunset Boulevard	AM	0.742	C
		PM	0.758	C
20.	Bronson Avenue & Sunset Boulevard	AM	0.668	B
		PM	0.693	B
21.	Van Ness Avenue & Sunset Boulevard	AM	0.610	B
		PM	0.737	C
22.	Wilton Place & Sunset Boulevard	AM	0.525	A
		PM	0.582	A

Notes

- * LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

Chapter 3

Future without Project Conditions

Estimates of future traffic conditions both with and without the Project, representing cumulative conditions, were developed to evaluate the potential impacts of the Project on the local street system. This discussion details the assumptions used to develop the Future without Project Conditions in Year 2023, which corresponds to the Project buildout year.

The existing traffic volumes were factored by an annual ambient growth rate of 1% per year to approximate regional growth and development in accordance with LADOT guidelines. In addition to the ambient growth, for purposes of providing a conservative analysis of potential cumulative transportation impacts, the traffic generated by related projects was also added to estimate the Future without Project traffic conditions.

CEQA GUIDELINES REGARDING FUTURE TRAFFIC CONDITIONS

The forecast of Future without Project Conditions was prepared in accordance with procedures outlined in Section 15130 of *Guidelines for Implementation of the California Environmental Quality Act, Chapter 3, Title 14, California Code of Regulations* (California Natural Resources Agency, amended July 27, 2007) (“CEQA Guidelines”). Specifically, two options are provided for developing the cumulative traffic volume forecast:

“(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the [lead] agency, or

“(B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.”

As described in detail below, this analysis includes traffic growth both from related present and future development projects that are proposed, approved, or under construction (the “Related Projects”) in accordance with option “A” above and from regional growth projections (i.e., ambient growth) in accordance with option “B” above. Given that the ambient growth factor discussed below likely includes some traffic growth resulting from the Related Projects, the transportation analysis provides a highly conservative estimate of Future without Project traffic volumes.

AMBIENT TRAFFIC GROWTH

Existing traffic is expected to increase as a result of regional growth and development outside the Study Area. The CMP provides general growth factors based on regional modeling. As shown in Exhibit D-1 of the CMP, the Central Los Angeles area is estimated to experience a total regional growth in traffic of 1.70% between the years of 2015 and 2025, which equates to an ambient growth factor of approximately 0.17% per year.

However, based on discussions with LADOT through the MOU process, a conservative ambient growth factor of 1% per year compounded annually was applied to adjust the existing traffic volumes to reflect the effects of the regional growth and development by Year 2023. The total adjustment applied over the six-year period was 6.15%. Therefore, the ambient growth rate of 1% per year more than accounts for the projected growth from the CMP. This growth factor conservatively accounts for increases in traffic due to small or re-use projects that do not require full traffic studies, potential projects not yet proposed or projects outside the transportation analysis Study Area, as well as projects outside of a 2.0-mile radius from the Project Site or the general Hollywood area.

RELATED PROJECTS

In accordance with *CEQA Guidelines*, this Transportation Impact Study also considered the effects of the Project in relation to the Related Projects. The list of Related Projects is based on information provided by the Department of City Planning and LADOT, as well as recent studies of projects in the area. The Related Projects are detailed in Table 6 and shown in Figure 5. Though

the buildout years of many of these Related Projects are uncertain and may be well beyond the buildout year of the Project, and notwithstanding that some may never be approved or developed, they were all considered as part of this Transportation Impact Study and conservatively assumed to be completed by the Project buildout year 2023.

For example, the Paramount Pictures Studios Master Plan and the NBCUniversal Evolution Plan were included; however, as master plans will be developed over time, with full buildout years of 2038 and 2030, respectively, which are beyond the Year 2023 buildout year of the Project. Therefore, the traffic growth due to the development of Related Projects considered in this analysis is highly conservative and, by itself, substantially overestimates the actual traffic volume growth in the Hollywood area that would likely occur in the next six years prior to Project buildout. In addition, the list of Related Projects includes the City's draft update to the *Hollywood Community Plan*, which is in the initial planning stages. Based on preliminary information from the City, the updated *Hollywood Community Plan* will propose updates to land use policies and plans that would primarily increase commercial and residential development potential in and near the Regional Center Commercial portion of the community and along selected corridors in the *Hollywood Community Plan* area. Corresponding decreases in development potential would be primarily focused on low to medium-scale multi-family residential neighborhoods to conserve existing density and intensity of those neighborhoods. The *Hollywood Community Plan* update, once adopted, will be a long-range plan designed to accommodate growth in Hollywood until Year 2040. Only the initial period of any such projected growth would overlap with the Project's future baseline forecast as the Project would be completed in Year 2023, well before the update to the *Hollywood Community Plan*'s horizon year. Moreover, Year 2023 is a similar projected buildout year as many of the Related Projects identified in Table 6. Accordingly, it can be assumed that the projected growth reflected by the list of Related Projects, which in itself is a conservative assumption as discussed above, would account for any overlapping growth that may be assumed by the update to the *Hollywood Community Plan* upon its adoption. With the addition of the 1% per year ambient growth factor previously discussed, the Future without Project cumulative condition is even more conservative.

Using these conservative assumptions, the potential transportation impacts of the Project were evaluated within the context of the worst-case cumulative impact of all prospective development. The development of estimated traffic volumes added to the Study Area as a result of Related

Projects involves the use of a three-step process: trip generation, trip distribution, and trip assignment.

Trip Generation

Trip generation estimates for the Related Projects were provided by LADOT or were calculated using a combination of previous study findings and the trip generation rates contained in *Trip Generation, 9th Edition* (Institute of Transportation Engineers, 2012). Table 6 summarizes the Related Project trip generation for typical weekdays, including daily trips, morning peak hour trips, and afternoon peak hour trips. These projections are very conservative in that they do not in every case account for either the trips generated by the existing uses to be removed or the likely use of other travel modes (transit, bicycle, walk, etc.) Further, they do not account for the internal capture trips within a multi-use development, nor the interaction of trips between multiple related projects within the Hollywood area, in which one Related Project serves as the origin for a trip destined for another Related Project.

Trip Distribution

The geographic distribution of the traffic generated by the Related Projects is dependent on several factors. These include the type and density of the proposed land uses, the geographic distribution of the population from which the employees/residents and potential patrons of the proposed developments are drawn, and the location of these projects in relation to the surrounding street system. These factors are considered along with logical travel routes through the street system to develop a reasonable pattern of trip distribution.

Trip Assignment

The trip generation estimates for the Related Projects were assigned to the local street system using the trip distribution pattern described above. Figure 6 shows the peak hour traffic volumes associated with these Related Projects at the study intersections. These volumes were then added to the existing traffic volumes after adjustment for ambient growth through the projected

buildout year of 2023. As discussed above, this is a conservative approach as many of the Related Projects may already be reflected in the ambient growth rate. These volumes represent the Future without Project Conditions (i.e., existing traffic volumes added to ambient traffic growth and Related Project traffic growth) and are shown in Figure 7 for the 29 study intersections.

FUTURE IMPROVEMENTS

Future Roadway Improvements

The analysis of future conditions accounted for roadway improvements that were funded and reasonably expected to be implemented prior to the buildout of the proposed Project. These roadway improvements result in changes to the physical configuration at the study intersections. For example, as mitigation for the Paramount Pictures Master Plan, the intersection of Gower Street & US 101 Southbound Off-ramp / Yucca Street may be signalized. However, this improvement depends on the construction of the development project, which is not guaranteed to be built, or may not be completed by Project buildout. Therefore, this analysis conservatively concludes that these improvements will not be implemented by Year 2023.

City Bicycle Plan

The 2010 Bicycle Plan identifies the City's vision for a more integrated bicycle network throughout the City, including within the Study Area. It proposes new bicycle lanes on Hollywood Boulevard, Sunset Boulevard, Yucca Street between Cahuenga Boulevard and Vine Street, Cahuenga Boulevard, Vine Street south of Yucca Street, and Wilton Place south of Franklin Avenue. It also proposes bicycle-friendly streets on Franklin Avenue, Argyle Avenue north of Selma Avenue, Selma Avenue, and Carlos Avenue. There is currently no schedule for implementation of these bicycle lanes. Upon consultation with LADOT's bicycle section, no changes to vehicular lane configurations as a result of potential new bicycle lanes were assumed in this analysis.

Mobility Plan 2035

In Mobility Plan 2035, the City identifies key corridors as components of various “mobility-enhanced networks.” Each network is intended to focus on improving a particular aspect of urban mobility, including transit, neighborhood connectivity, bicycles, pedestrians, and vehicles. The specific improvements that may be implemented in those networks have not yet been identified, and there is no schedule for implementation and, therefore, no changes to vehicular lane configurations were made as a result of Mobility Plan 2035. However, the following mobility-enhanced networks included corridors within the Study Area:

Transit Enhanced Network: Hollywood Boulevard was identified as a Moderate Transit-Enhanced Street.

Neighborhood Enhanced Network: Bronson Avenue between Carlton Way and Hollywood Boulevard was identified as part of a Priority Neighborhood Enhanced Network. The following corridors were identified as part of a Neighborhood Enhanced Network:

- Franklin Avenue
- Yucca Street between Argyle Avenue and Vista Del Mar Avenue
- Selma Avenue west of El Centro Avenue
- Carlos Avenue between Vista Del Mar Avenue and Bronson Avenue
- Cahuenga Boulevard south of Hollywood Boulevard
- Argyle Avenue between Franklin Avenue and Selma Avenue
- El Centro Avenue south of Selma Avenue
- Vista Del Mar Avenue north of Franklin Avenue and between Yucca Street and Carlos Avenue
- Bronson Avenue between Tamarind Avenue and Carlos Avenue and between Hollywood Boulevard and Carlton Way
- Carlton Way between Bronson Avenue and Canyon Drive
- Canyon Drive between Carlton Way and Harold Way
- Van Ness Avenue south of Harold Way
- Wilton Place between Sunset Boulevard and Fernwood Avenue

Bicycle Enhanced Network / Bicycle Lane Network: Sunset Boulevard was identified for a Planned Bicycle Lane. The following corridors were identified for Priority Planned Bicycle Lanes:

- Cahuenga Boulevard between Yucca Street and Hollywood Boulevard
- Vine Street south of Yucca Street
- Wilton Place between Franklin Avenue and Sunset Boulevard
- Hollywood Boulevard
- Yucca Street between Cahuenga Boulevard and Vine Street

Vehicle Enhanced Network: Sunset Boulevard between Highland Avenue and US 101 was identified.

Pedestrian Enhanced District: The following corridors were identified as part of the Pedestrian Enhanced District:

- Franklin Avenue west of Van Ness Avenue
- Yucca Street between Vine Street and Argyle Avenue
- Hollywood Boulevard
- Sunset Boulevard west of La Baig Avenue
- Cahuenga Boulevard south of Franklin Avenue
- Vine Street south of Franklin Avenue
- Gower Street south of Carlos Avenue
- Bronson Avenue between Carlos Avenue and Carlton Way

FUTURE WITHOUT PROJECT INTERSECTION LEVELS OF SERVICE

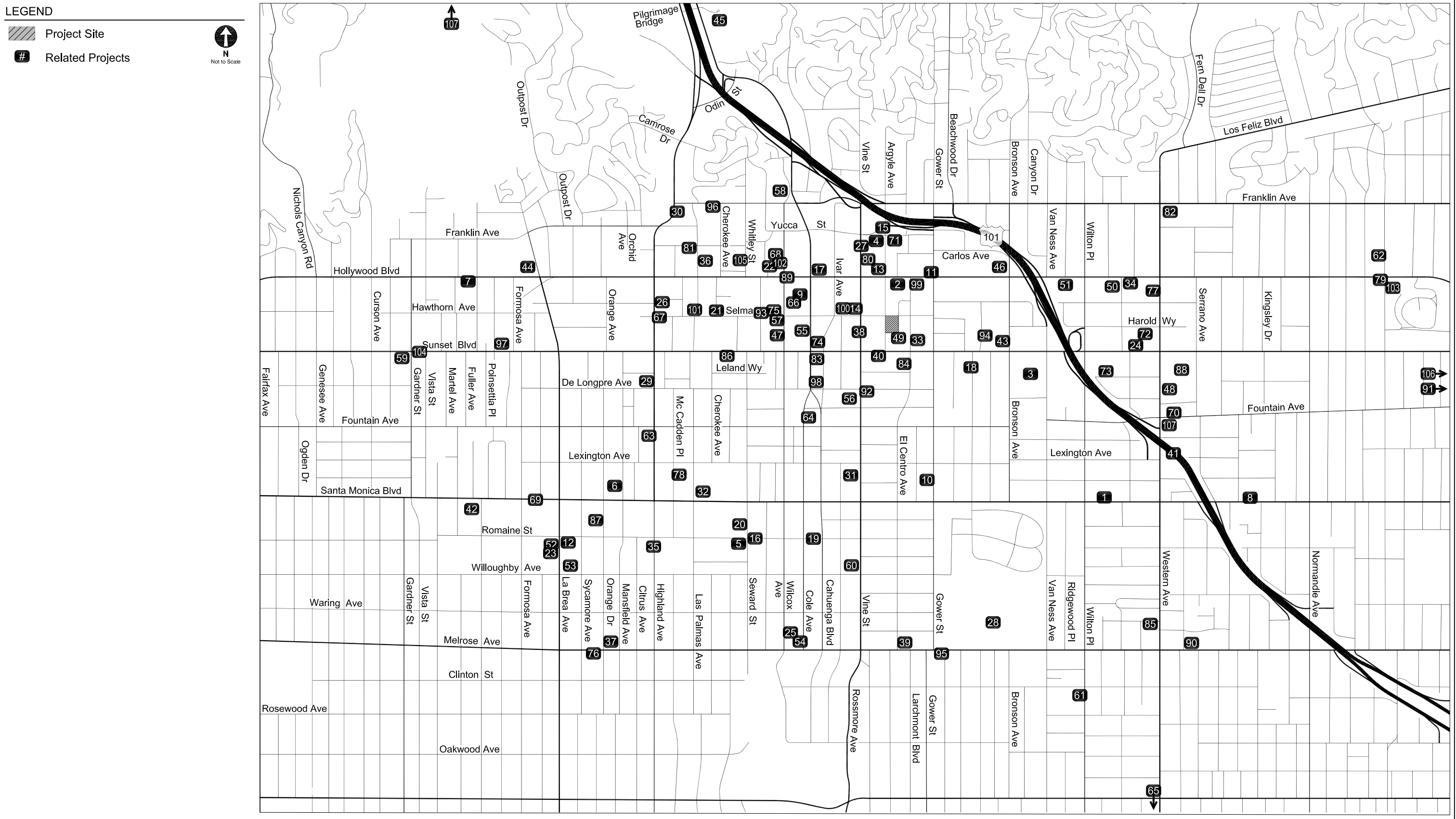
Table 7 summarizes the weekday morning and afternoon peak hour LOS results for each of the signalized study intersections under Future without Project Conditions. To provide a more conservative analysis, the LOS presented in Table 7 reflects worst-case conditions at two of the 22 signalized study intersections – Vine Street & Hollywood Boulevard (Intersection #9) and Vine Street & Sunset Boulevard (Intersection #16). As shown, 17 of the 22 signalized study intersections are projected to operate at LOS D or better during both the weekday morning and

afternoon peak hours. The following five intersections would operate at LOS E or F during at least one of the analyzed peak hours:

- 2. Argyle Avenue & Franklin Avenue/US 101 Northbound On-Ramp (afternoon peak hour)
- 9. Vine Street & Hollywood Boulevard (morning and afternoon peak hours)
- 16. Vine Street & Sunset Boulevard (morning and afternoon peak hours)
- 19. Gower Street & Sunset Boulevard (morning and afternoon peak hours)
- 21. Van Ness Avenue & Sunset Boulevard (afternoon peak hour)

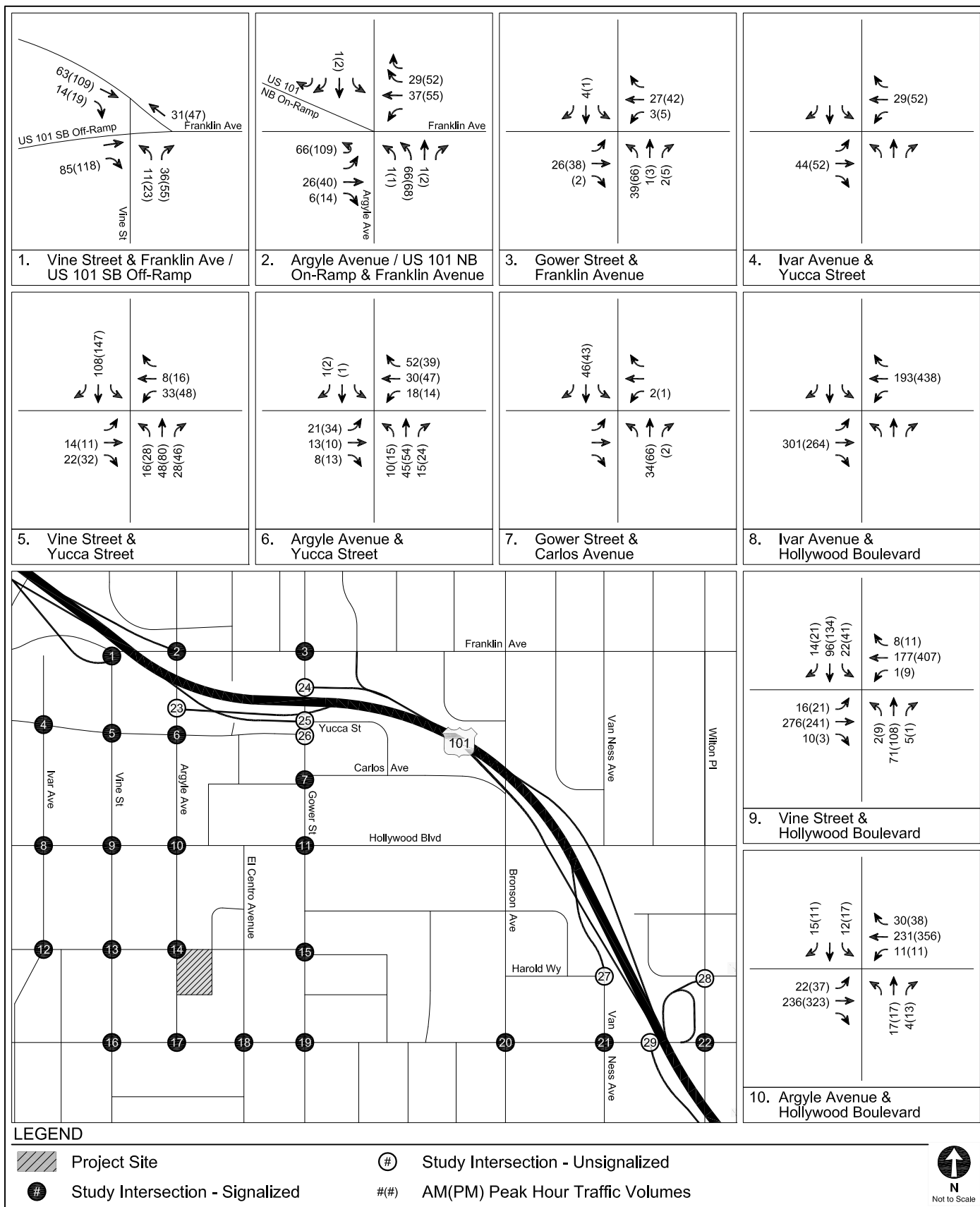
The LOS calculation worksheets are provided in Appendix D.

Detailed analysis of the seven unsignalized study intersections is provided in Chapter 9.



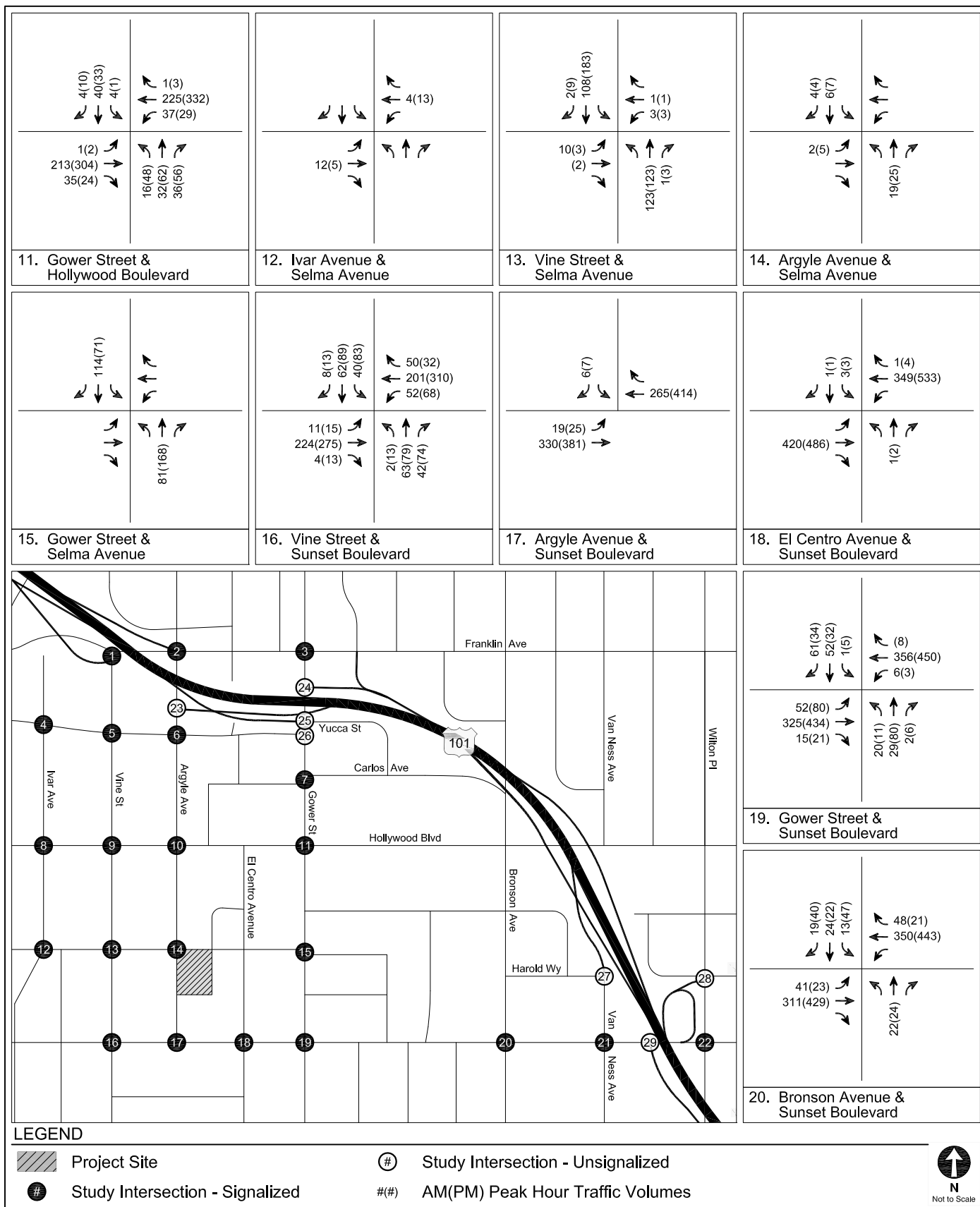
LOCATIONS OF RELATED PROJECTS

FIGURE
5



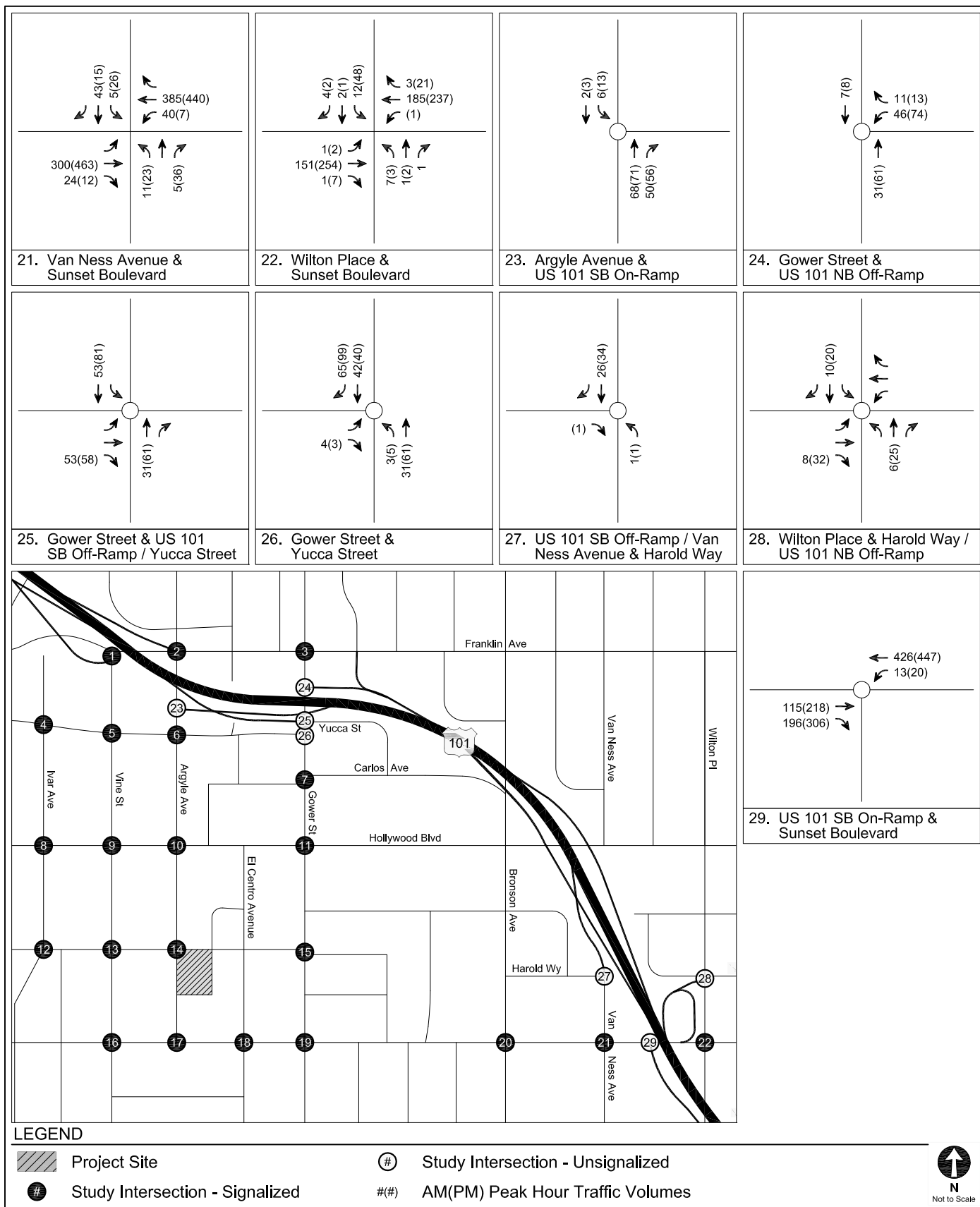
RELATED PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
6



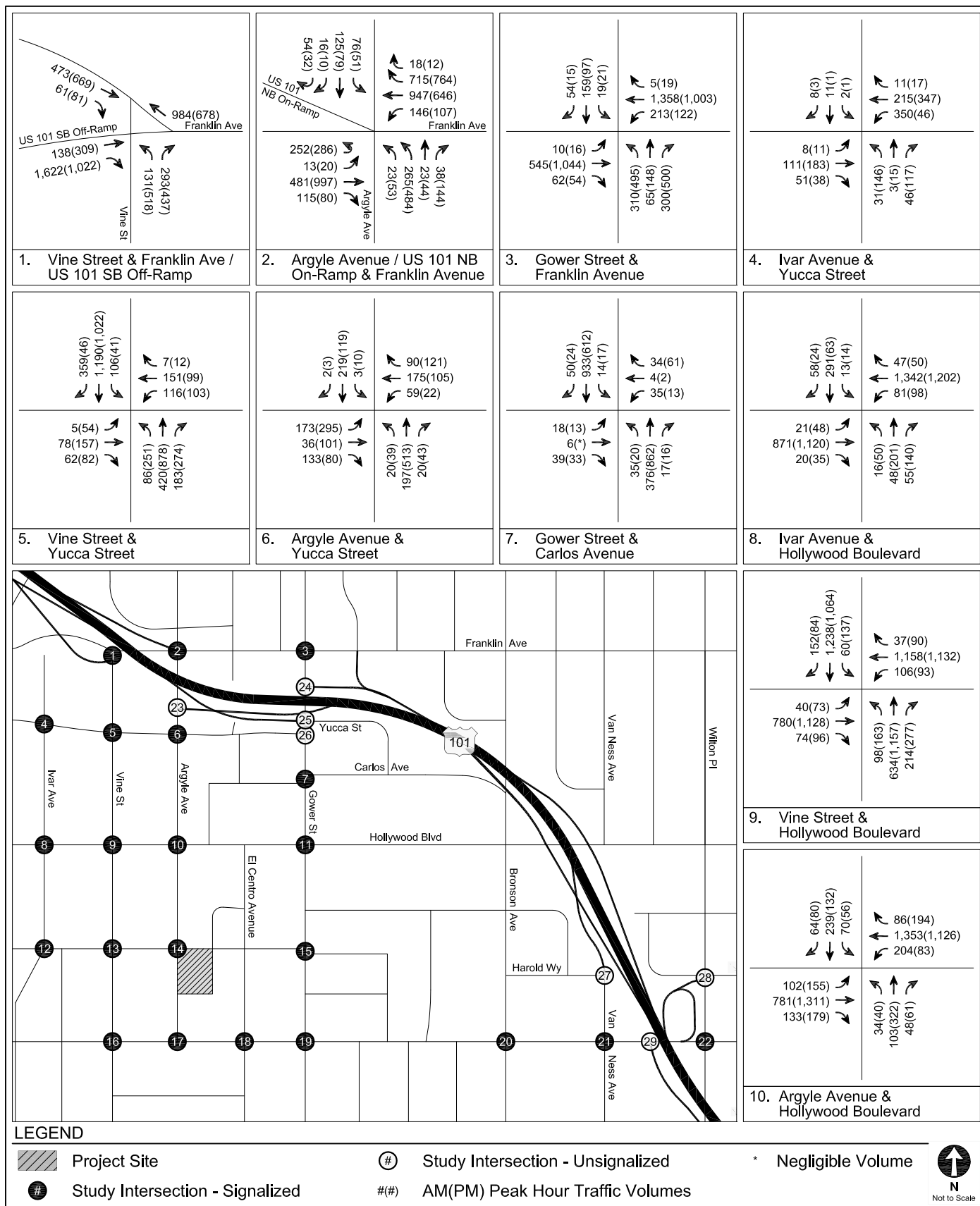
RELATED PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
6 (CONT.)



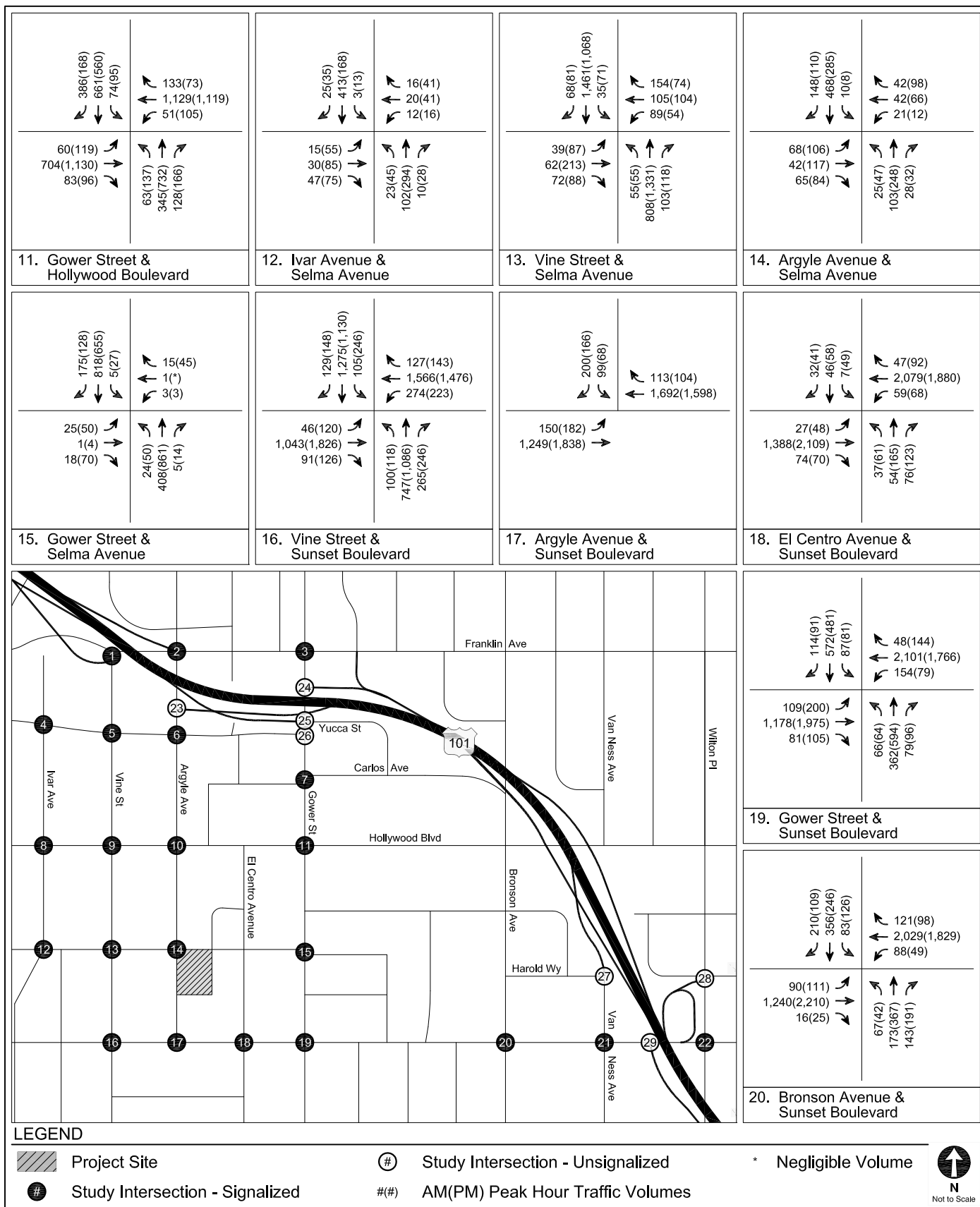
RELATED PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
6 (CONT.)



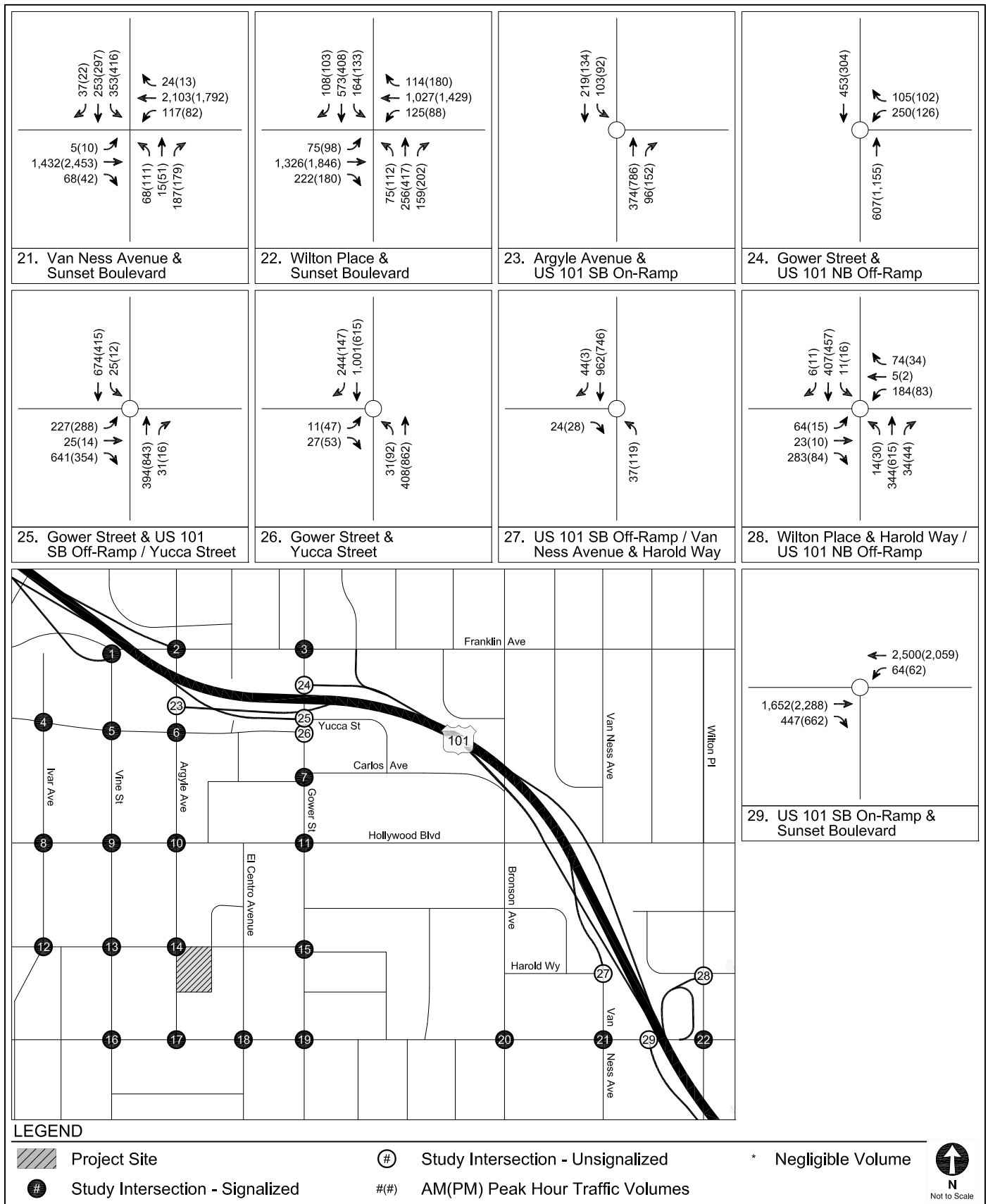
FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE
7



FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE
7 (CONT.)



FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE
7 (CONT.)

TABLE 6
RELATED PROJECTS

No	Project Name [a]	Address	Description	Dally	Trip Generation					
					AM Peak Hour			PM Peak Hour		
					Inbound	Outbound	Total	Inbound	Outbound	Total
1	Paseo Plaza Mixed-Use	5651 W Santa Monica Bl	375 condo units and 377,900 sf retail	6,831	50	200	250	419	225	644
2	BLVD 6200 Mixed-Use	6200 W Hollywood Bl	28 J.L.W.Q. Units, 1,014 apartment units and 175,000 sf retail (Phase 1 Complete)	2,816	41	103	143	133	109	242
3	Sunset Bronson Studios	5800 W Sunset Bl	404,799 sf office	2,690	356	48	404	64	314	378
4	Yucca Street Condos	6230 W Yucca St	114 apartment units and 2,697 sf commercial	473	5	27	32	26	12	38
5	Hollywood 959	959 N Seward St	241,568 sf office	2,337	297	39	336	58	252	310
6	Archstone Hollywood Mixed-Use Project	6911 W Santa Monica Bl	231 apartments, 5,000 sf high-turnover restaurant, 10,000 sf general retail	2,272	1	111	112	133	54	187
7 [b]	Temple Israel of Hollywood	7300 W Hollywood Bl	Temple renovation	218	N/A	N/A	68	8	10	18
8	Mixed-Use	5245 W Santa Monica Bl	49 apartment units and 32,272 sf retail	857	3	29	32	45	28	73
9	Selma Hotel	6417 W Selma Ave	180 room hotel and 12,840 sf restaurant	1,849	6	4	10	61	59	120
10	Hollywood Production Center	1149 N Gower St	57 Apartments	735	6	23	29	23	12	35
11	Hollywood Gower Mixed-Use	6100 W Hollywood Bl	220 apartment units and 3,270 sf restaurant	1,439	24	76	100	86	46	132
12	Mixed-Use Office/Retail	936 N La Brea Ave	88,750 sf office and 12,000 sf retail	911	24	5	29	14	37	38
13	Pantages Theater Office	6225 W Hollywood Bl	210,000 sf office	1,918	243	33	276	43	411	254
14	Selma & Vine Office Project	1601 N Vine St	100,386 sf office and 2,012 sf commercial	1,239	155	27	182	39	145	184
15	Argyle Hotel Project	1800 N Argyle Ave	225 room hotel	1,360	22	37	59	60	18	78
16	Seward Street Office Project	956 N Seward St	126,980 sf office	1,240	165	21	186	29	151	180
17	Hotel & Restaurant Project	6381 W Hollywood Bl	80 hotel rooms and 15,290 sf restaurant	1,020	(19)	11	(8)	62	4	66
18 [b]	Emerson College Project (Student Housing)	1460 N Gordon St	224 student housing units, 16 faculty/staff housing units and 6,400 sf retail	730	22	88	110	45	28	73
19	Television Center (TVC Expansion)	6300 W Romaine St	114,725 office, 40,927 gym and 38,072 dance studio	1,596	199	27	226	20	17	37
20	Hollywood Center Studios Office	6601 W Romaine St	106,125 sf office	808	88	4	92	12	39	51
21 [b]	Selma Community Housing	1603 N Cherokee Ave	66 affordable apartment units	439	7	27	34	26	15	41
22	Hudson Building	6523 W Hollywood Bl	10,402 sf restaurant, 4,074 sf of office, and 890 sf of storage	547	(16)	(11)	(27)	32	4	36
23	La Brea Gateway	915 N La Brea Ave	33,500 sf supermarket and 179 apartment units	2,615	5	86	91	158	90	248
24	Target Retail Shopping Center Project	5520 W Sunset Bl	163,862 sf discount store and 30,887 shopping center	4,903	52	21	73	211	211	422
25	Residential	712 N Wilcox Ave	103 apartment units	550	8	34	42	33	18	51
26	Mixed-Use	1600-1610 N Highland Ave	248 apartment units and 12,785 sf retail	1,805	22	90	112	96	54	150
27	Millennium Hollywood Mixed-Use Project	1740 N Vine St	492 apartment units, 200 hotel rooms, 100,000 sf office, 35,000 sf fitness club, 15,000 sf retail, 34,000 sf restaurant	9,922	321	253	574	486	438	924
28	Paramount Pictures	5555 W Melrose Ave	635,500 sf of production office, 638,100 sf of office, 89,200 sf of retail, 21,000 sf of stage, and 1,900 sf of support uses	9,830	712	213	925	297	736	1,033
29	Apartments	1411 N Highland Ave	76 apartment units, 2,500 sf commercial	823	23	43	66	45	26	71
30	Apartment Project	1824 N Highland Ave	118 apartment units	667	10	41	51	40	22	62
31	Hotel	1133 N Vine St	112 hotel rooms, 661 sf cafe	457	19	13	32	18	15	33
32	The Lexington Mixed-Use	6677 W Santa Monica Bl	695 apartment units, 24,900 sf commercial	1,938	127	182	309	170	122	292
33 [b]	Columbia Square Mixed-Use	6121 W Sunset Bl	200 apartment units, 422,610 sf office, 41,300 sf retail/restaurant, and 125 hotel rooms	6,327	477	211	688	254	428	682
34	Mixed-Use (High Line West)	5550 W Hollywood Bl	280 apartment units and 12,030 sf retail	1,267	(3)	43	40	47	17	64
35 [b]	Tutoring Center	927 N Highland Ave	100 school students and 18 tutoring employees	155	4	(1)	3	23	17	40
36	Las Palmas Residential (Hollywood Cherokee)	1718 N Las Palmas Ave	224 du and 985 sf retail	1,333	21	84	105	81	43	124
37	Mixed-Use	6915 Melrose Ave	13 condominium units and 6,250 sf retail	398	2	12	14	96	54	150
38 [b]	Sunset & Vine Mixed-Use	1538 N Vine St	306 apartment units and 68,000 sf retail	3,049	57	78	136	158	136	294
39	Condos & Retail	5663 Melrose Ave	96 condominium units and 3,350 sf retail	797	8	37	45	96	54	63
40	6250 Sunset (Nickelodeon)	6250 W Sunset Bl	200 apartment units and 4,700 sf retail	1,473	52	80	132	71	50	121

TABLE 6 (CONTINUED)
RELATED PROJECTS

No	Project Name [a]	Address	Description	Dally	Trip Generation					
					AM Peak Hour			PM Peak Hour		
					Inbound	Outbound	Total	Inbound	Outbound	Total
41	Hollywood Central Park	Hollywood Freeway (US 101)	38 acre park, amphitheater, and neighborhood uses	2,298	104	69	173	115	89	204
42 [b]	Movietown	7302 W Santa Monica Bl	371 apartment units, 7,800 sf office, 5,000 sf restaurant, and 19,500 sf commercial	1,617	41	122	163	155	94	249
43	Mixed-Use	5901 Sunset Bl	274,000 sf office and 26,000 sf supermarket	3,839	350	61	411	122	339	461
44	Mixed-Use	7107 Hollywood Bl	410 apartment units, 5,000 sf restaurant, and 5,000 sf retail	2,637	49	157	206	167	86	253
45	John Anson Ford Theater	2580 Cahuenga Bl East	311 net new theater seats, 5,400 sf restaurant, and 30 office employees	610	34	1	35	18	43	61
46	1717 Bronson Avenue	1717 N Bronson Ave	89 apartment units	436	6	27	33	26	14	40
47	Sunset + Wilcox	1541 N Wilcox Ave	200 hotel rooms and 9,000 sf restaurant	3,359	103	80	183	147	114	261
48	Mixed-Use	1350 N Western Ave	200 apartment units, 4 guest rooms and 5,500 sf retail/restaurant	1,439	24	76	100	86	46	132
49	Palladium Residences	6201 W Sunset Bl	731 apartment units (37 affordable) and 24,000 sf of retail and restaurant uses	4,913	128	228	356	234	169	403
50	5600 W Hollywood Boulevard	5600 W Hollywood Bl	33 apartment units, 1,289 sf commercial	604	22	16	38	22	22	44
51	5750 Hollywood	5750 Hollywood Bl	161 apartment units and 4,747 sf commercial	1,180	22	66	88	68	38	106
52	925 La Brea Avenue	925 La Brea Ave	16,360 sf retail and 45,432 sf office	810	66	11	77	24	71	95
53	904 La Brea Avenue	904 La Brea Ave	169 apartment units and 37,057 sf retail	2,072	25	68	93	106	80	186
54	2014 Residential	707 N Cole Ave	84 apartment units	398	6	25	31	24	12	36
55	Cahuenga Boulevard Hotel	1525 N Cahuenga Bl	64 hotel rooms, 700 sf rooftop restaurant/lounge, and 3,300 sf restaurant	469	13	9	22	17	17	34
56	Academy Square	1341 Vine St	285,719 sf office, 200 apartment units, 16,135 sf restaurant	6,218	330	164	494	152	220	372
57 [b]	Hotel	6500 Selma Ave	70 hotel rooms and 4,320 sf restaurant	1,121	48	36	84	47	38	85
58	Hotel	1921 Wilcox Ave	122 hotel rooms and 4,225 sf restaurant	1,233	34	26	60	51	40	91
59	Sunset Mixed-Use	7500-7510 W Sunset Bl	213 apartment units, 10,000 sf restaurant and 20,000 sf retail	1,239	63	125	188	117	61	178
60	Mixed-Use	901 N Vine St	70 apartment units, 3,000 sf commercial	(32)	4	26	30	(5)	1	(4)
61	Apartments	525 N Wilton Pl	88 apartment units	449	6	28	34	27	14	41
62	Hardware Store	4905 W Hollywood Bl	36,600 sf retail	1,404	13	12	25	64	68	132
63	Mixed-Use	1233 N Highland Ave	72 apartment units, 12,160 sf commercial	714	11	27	38	38	28	66
64	Mixed-Use	1310 N Cole Ave	369 apartment units and 2,570 office	2,226	20	139	159	139	58	197
65	Restaurants	135 N Western Ave	4,066 sf restaurant addition to 7,838 sf existing restaurant	457	2	2	4	25	13	38
66 [b]	TAO Restaurant	6421 W Selma Ave	Replace auto body shop with 17,607 sf quality restaurant	1,688	8	7	15	94	46	140
67	Hollywood Crossroads	1540-1552 Highland Ave	950 residential units, 308 hotel rooms, 95,000 sf office, and 185,000 sf commercial retail uses	14,833	381	498	879	733	548	1,281
68	Wilcox Hotel	1717 N Wilcox Ave	133 hotel rooms and 3,580 sf retail	1,244	54	35	89	49	43	92
69 [b]	Faith Plating	7143 Santa Monica Bl	145 residential units and 7,858 sf retail/restaurant	1,630	24	72	96	88	52	140
70	Apartments	5460 W Fountain Ave	75 apartment units	499	8	30	38	31	16	47
71	Mixed-Use	6220 W Yucca St	210 hotel rooms, 136 apartment units and 6,980 sf restaurant	2,647	88	110	198	129	85	214
72	SunWest Project (Mixed-Use)	5525 W Sunset Bl	293 apartment units and 33,980 sf commercial	3,411	80	124	204	203	142	345
73	Hollywood De Longpre Apartments	5632 De Longpre Ave	185 apartment units	800	(31)	25	(6)	50	19	69
74	Ivar Gardens Hotel	6409 W Sunset Bl	275 hotel rooms and 1,900 sf retail	1,285	51	26	77	53	60	113
75	Selma Hotel	6516 W Selma Ave	212 rooms, 3,855 sf bar/lounge, and 8,500 sf rooftop bar/event space	2,241	71	50	121	105	84	189
76	Melrose Crossing Mixed-Use	7000 Melrose Ave	40 apartment units and 6,634 sf retail	334	4	17	21	20	12	32
77	Mixed-Use	1657 N Western Ave	91 apartment units, 15,300 sf retail	702	10	29	39	37	25	62
78	McCadden Campus (LGBT)	1118 N McCadden Pl	45 youth/senior housing units, 50,325 sf social service support facility, 17,040 sf office, 1,885 sf commercial retail or restaurant, temporary housing consisting of 40 emergency overnight beds and 60 transitional living beds, and retention of existing 30,708 "The Village" site	1,346	49	31	80	53	56	109
79	4900 Hollywood Mixed-Use	4900 W Hollywood Bl	150 apartment units and 13,813 sf retail	1,585	24	75	99	89	56	145
80	citizenM Hotel	1718 Vine St	216 hotel rooms and 4,354 sf restaurant	1,101	58	41	99	35	42	77

TABLE 6 (CONTINUED)
RELATED PROJECTS

No	Project Name [a]	Address	Description	Delly	Trip Generation					
					AM Peak Hour			PM Peak Hour		
					Inbound	Outbound	Total	Inbound	Outbound	Total
81	Apartments	1749 Las Palmas Ave	70 apartment units and 3,117 sf retail	147	2	9	11	9	5	14
82	Mixed-Use	1868 N Western Ave	96 apartment units and 5,546 sf retail	363	(5)	18	13	20	7	27
83	6400 Sunset Mixed-Use	6400 Sunset Bl	232 apartment units and 7,000 sf restaurant	214	18	88	106	69	1	70
84	6200 W Sunset Boulevard	6200 W Sunset Bl	270 apartment units, 1,750 sf quality restaurant, 2,300 sf pharmacy, and 8,070 sf retail	1,778	26	97	123	100	35	135
85	747 N Western Avenue	747 N Western Ave	44 apartment units and 7,700 sf retail	622	8	21	29	32	24	56
86	6630 W Sunset Boulevard	6630 W Sunset Bl	40 apartment units	266	4	16	20	16	9	25
87	1001 N Orange Drive	1001 N Orange Dr	53,537 sf office	817	102	14	116	24	115	138
88	Sunset & Western	5420 W Sunset Bl	735 apartments and 95,820 sf commercial	1,538	(12)	190	178	119	18	137
89	Hollywood & Wilcox	6430-6440 W Hollywood Bl	260 apartment units, 3,580 sf office, 11,020 sf retail and 3,200 sf restaurant	1,625	23	98	121	99	44	143
90	Mixed-Use	4914 W Melrose Ave	45 live/work units & 3,760 sf retail	460	7	20	27	25	17	42
91	Hospital Seismic Retrofit	1300 N Vermont Ave	Replace existing hospital and ancillary uses with 30,933 sf office	290	36	5	41	6	30	36
92	Onni Group Mixed-Use Development	1360 N Vine St	429 condo units 55,000 sf grocery, 5,000 sf retail and 8,988 sf of restaurant	3,768	57	157	214	202	140	342
93	1600 Schrader	1600 Schrader Bl	168-room hotel and 5,979 sf restaurant	1,666	58	40	98	80	63	143
94	Mixed-Use	5939 W Sunset Bl	299 apartment units, 38,440 sf office and 5,064 sf of restaurant, and 3,739 sf retail	3,731	152	191	343	182	152	334
95	Melrose & Beachwood	5570 W Melrose Ave	52 apartment units and 5,500 sf commercial	430	(1)	20	19	21	10	31
96	Montecito Senior Housing	6650 W Franklin Ave	68 senior apartments	234	5	9	14	9	8	17
97	The Chaplin Hotel Project	7219 W Sunset Bl	93 hotel rooms and 2,800 sf restaurant	761	27	18	45	27	29	56
98	Godfrey Hotel	1400 N Cahuenga Bl	221-room hotel and 3,000 sf restaurant	1,866	63	53	116	72	58	130
99	6140 Hollywood	6140 Hollywood Bl	102-room hotel, 27 condominium units, and 11,460 sf restaurant	1,782	76	62	138	78	58	136
100	Selma - Wilcox Hotel	6421 W Selma Ave	114-room hotel, 1,993 sf restaurant	1,227	43	27	70	56	44	100
101	Apartments	1601 N Las Palmas Ave	86 apartment units	157	4	28	32	20	8	28
102	1723 N Wilcox Residential	1723 N Wilcox Ave	68 apartment units and 3,700 sf retail	537	16	28	44	29	18	47
103	Select @ Los Feliz (Mixed-Use)	4850 W Hollywood Bl	101 apartments and 10,000 sf restaurant	1,108	41	68	109	61	32	93
104	7445 Sunset Grocery	7445 W Sunset Bl	32,416 sf specialty grocery store	3,314	68	42	110	157	150	307
105	1719 Whitley Hotel	1719 N Whitley Ave	156-room hotel	1,275	49	34	83	48	46	94
106	Kaiser Hospital Redevelopment	1317-1345 N. Vermont/1328 N New Hampshire/4760 Sunset/1505 N Edgemont/1526 N Edgemont/1517 N Vermont/1424-1430 N Alexandria	211,992 hospital expansion	6,512	341	91	431	181	464	643
107	1276 N Western Ave	1276 N Western Ave	75 new apt units	424	7	26	33	23	17	40
108	NBC Universal Evolution Plan	100 Universal City Plaza	Theme park, production studio, and entertainment district master plan	19,139	1,271	489	1,760	307	1,391	1,698
OTHER AREA-WIDE PROJECTS										
Project		Description			Extents					
Hollywood Community Plan Update		<p>The Hollywood Community Plan Update proposes updates to land use policies and the land use diagram. The proposed changes would primarily increase commercial and residential development potential in and near the Regional Center Commercial portion of the community and along selected corridors in the Community Plan Area.</p> <p>The decreases in development potential would be primarily focused on low to medium scale multi-family residential neighborhoods to conserve existing density and intensity of those neighborhoods. The projected population growth has been captured in the conservative ambient growth rate assumed in the Future analysis.</p>			<p>South of City of Burbank, City of Glendale, and SR 134; west of Interstate 5; north of Melrose Avenue; south of Mulholland Drive, City of West Hollywood, Beverly Hills, including land south of the City of West Hollywood and north of Rosewood Avenue between La Cienega Boulevard and La Brea Avenue.</p>					

Notes

- [a] Source: Related project list based on available information at the time of the NOP (August 23, 2017) provided by LADOT, Department of City Planning, and recent studies in the area.
[b] Although construction of the related project may be partially complete/entirely complete, the project was not fully occupied when traffic counts were conducted. Therefore, the related project was considered and listed to provide a more conservative analysis.

TABLE 7
FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)
SIGNALIZED INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Future without Project Conditions	
			V/C	LOS
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM	0.369	A
		PM	0.445	A
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM	0.888	D
		PM	0.943	E
3.	Gower Street & Franklin Avenue	AM	0.713	C
		PM	0.804	D
4.	Ivar Avenue & Yucca Street	AM	0.262	A
		PM	0.325	A
5.	Vine Street & Yucca Street	AM	0.603	B
		PM	0.597	A
6.	Argyle Avenue & Yucca Street	AM	0.279	A
		PM	0.453	A
7.	Gower Street & Carlos Avenue	AM	0.375	A
		PM	0.306	A
8.	Ivar Avenue & Hollywood Boulevard	AM	0.629	B
		PM	0.621	B
9.	Vine Street & Hollywood Boulevard	AM	0.904	F *
		PM	0.897	F *
10.	Argyle Avenue & Hollywood Boulevard	AM	0.630	B
		PM	0.695	B
11.	Gower Street & Hollywood Boulevard	AM	0.843	D
		PM	0.843	D
12.	Ivar Avenue & Selma Avenue	AM	0.279	A
		PM	0.307	A
13.	Vine Street & Selma Avenue	AM	0.645	B
		PM	0.628	B
14.	Argyle Avenue & Selma Avenue	AM	0.443	A
		PM	0.383	A
15.	Gower Street & Selma Avenue	AM	0.685	B
		PM	0.631	B
16.	Vine Street & Sunset Boulevard	AM	0.957	F *
		PM	1.109	F *
17.	Argyle Avenue & Sunset Boulevard	AM	0.485	A
		PM	0.449	A
18.	El Centro Avenue & Sunset Boulevard	AM	0.507	A
		PM	0.695	B
19.	Gower Street & Sunset Boulevard	AM	1.007	F
		PM	1.028	F
20.	Bronson Avenue & Sunset Boulevard	AM	0.860	D
		PM	0.885	D
21.	Van Ness Avenue & Sunset Boulevard	AM	0.746	C
		PM	0.940	E
22.	Wilton Place & Sunset Boulevard	AM	0.605	B
		PM	0.737	C

Notes

- * LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

Chapter 4

Project Traffic

This chapter describes the assumptions and methodology used in developing the traffic volumes associated with the proposed Project within the Study Area.

PROJECT DESCRIPTION

As described in Chapter 1, the Project proposes the construction of a mixed-use development with up to 276 apartment units and approximately 9,000 sf of retail space and 15,000 sf of restaurant space. The existing office, retail, and warehouse uses and associated surface parking lot would be removed as part of the Project. Parking for the Project would be provided within an on-site parking garage with vehicular access via Selma Avenue.

The analysis of the alternate Supermarket Option is provided in Chapter 8.

PROJECT TRIP GENERATION

The number of trips expected to be generated by the Project was estimated using rates published for apartment, shopping center, and high-turnover restaurant uses in *Trip Generation, 9th Edition*. These rates are based on surveys of similar land uses at sites around the country and are provided as both daily rates and morning and afternoon peak hour rates. They relate the number of vehicle trips traveling to and from the Project Site to the size of development of each land use.

Appropriate trip generation reductions to account for public transit usage, trips shared between the different uses within the Project, and pass-by trips were made in consultation with LADOT. The Project Site is located within 1,500 feet of the Metro Red Line Hollywood/Vine Station; therefore, a 15% transit/walk-in adjustment was applied to the Project in accordance with

Transportation Impact Study Guidelines to account for transit usage and walking arrivals. A 20% internal capture adjustment was considered as part of the retail and restaurant trip generation estimates to account for person trips made between the different uses of the Project without using the off-site road system. A 50% and 20% adjustment was also applied to the retail and restaurant trip generation estimates, respectively (as allowed by *Transportation Impact Study Guidelines*) to account for pass-by trips, which are Project trips made by drivers passing on an adjacent roadway and stopping on the way from an origin to another destination. The pass-by trips are not new trips to the Study Area.

Additionally, the Project trip generation estimates were reduced to account for the trips that are currently generated by the existing office, retail, and warehouse uses of the Project Site, which will be removed with development of the Project. Appropriate transit and pass-by reductions were also applied to the existing uses.

After accounting for the adjustments above, the Project is anticipated to generate 2,013 net new daily trips, including 170 net new morning peak hour trips (43 inbound, 127 outbound) and 179 net new afternoon peak hour trips (128 inbound, 51 outbound), as summarized in Table 8.

PROJECT TRIP DISTRIBUTION

Similar to the trip distribution of traffic for the Related Projects described in Chapter 3, the geographic distribution of trips generated by the Project is dependent on the location of employment and commercial centers from which residents and patrons of the Project would be drawn, characteristics of the street system serving the Project Site, and the level of accessibility of the routes to and from the Project Site, existing intersection traffic volumes, the Project ingress/egress availability based on the proposed site access and circulation scheme, the location of the proposed driveways, as well as input from LADOT staff.

The intersection-level trip distribution pattern for the Project is shown in Figures 8A and 8B for the residential and commercial uses, respectively.

The regional pattern for the residential uses is generally as follows:

- 25% to/from the north (US 101)
- 15% to/from the east (Hollywood Boulevard, Sunset Boulevard)
- 40% to/from the south (US 101, Vine Street, Gower Street)
- 20% to/from the west (Hollywood Boulevard, Sunset Boulevard)

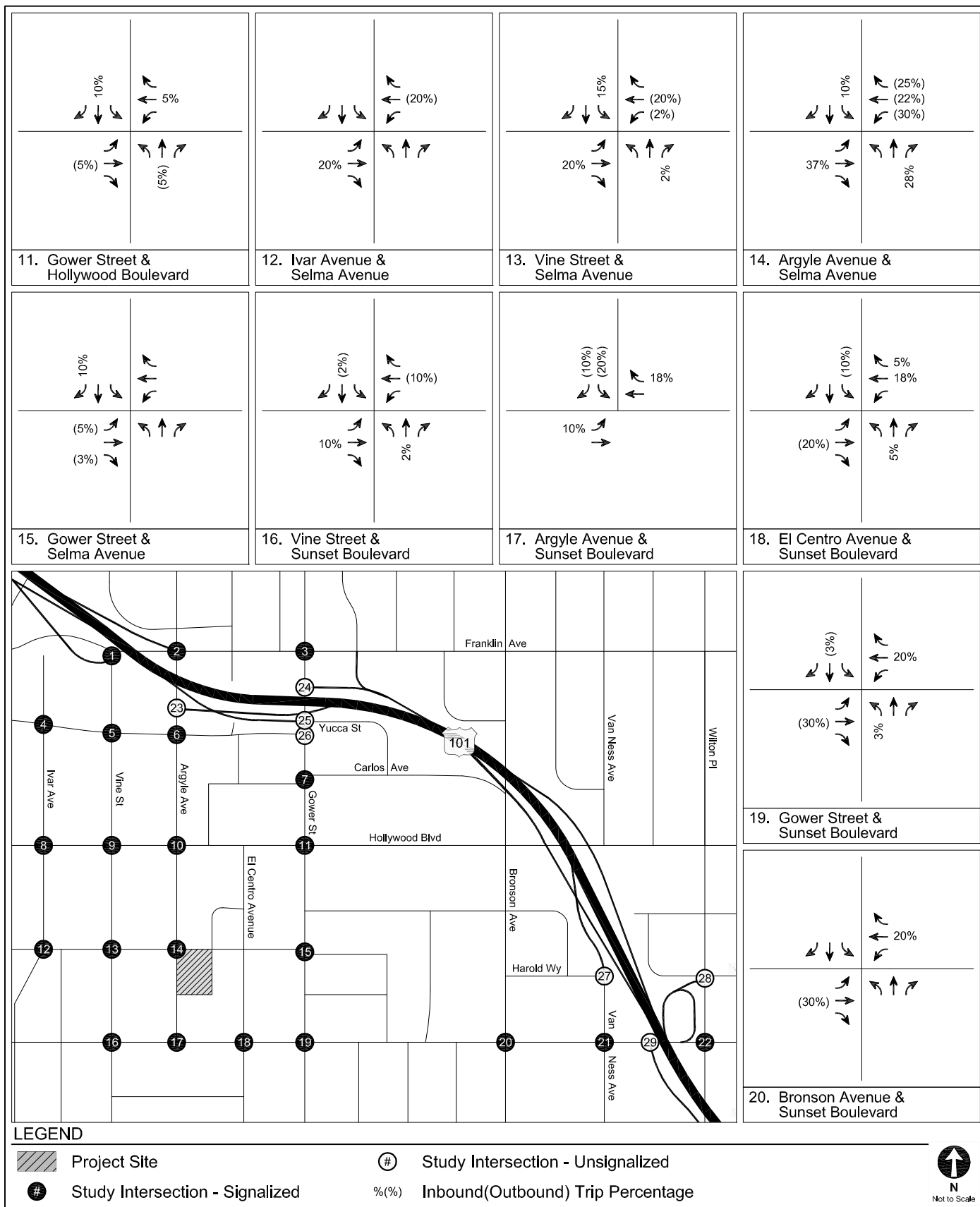
The regional pattern for the commercial uses is generally as follows:

- 30% to/from the north (US 101)
- 20% to/from the east (Hollywood Boulevard, Sunset Boulevard)
- 30% to/from the south (US 101, Vine Street, Gower Street)
- 20% to/from the west (Hollywood Boulevard, Sunset Boulevard)

PROJECT TRIP ASSIGNMENT

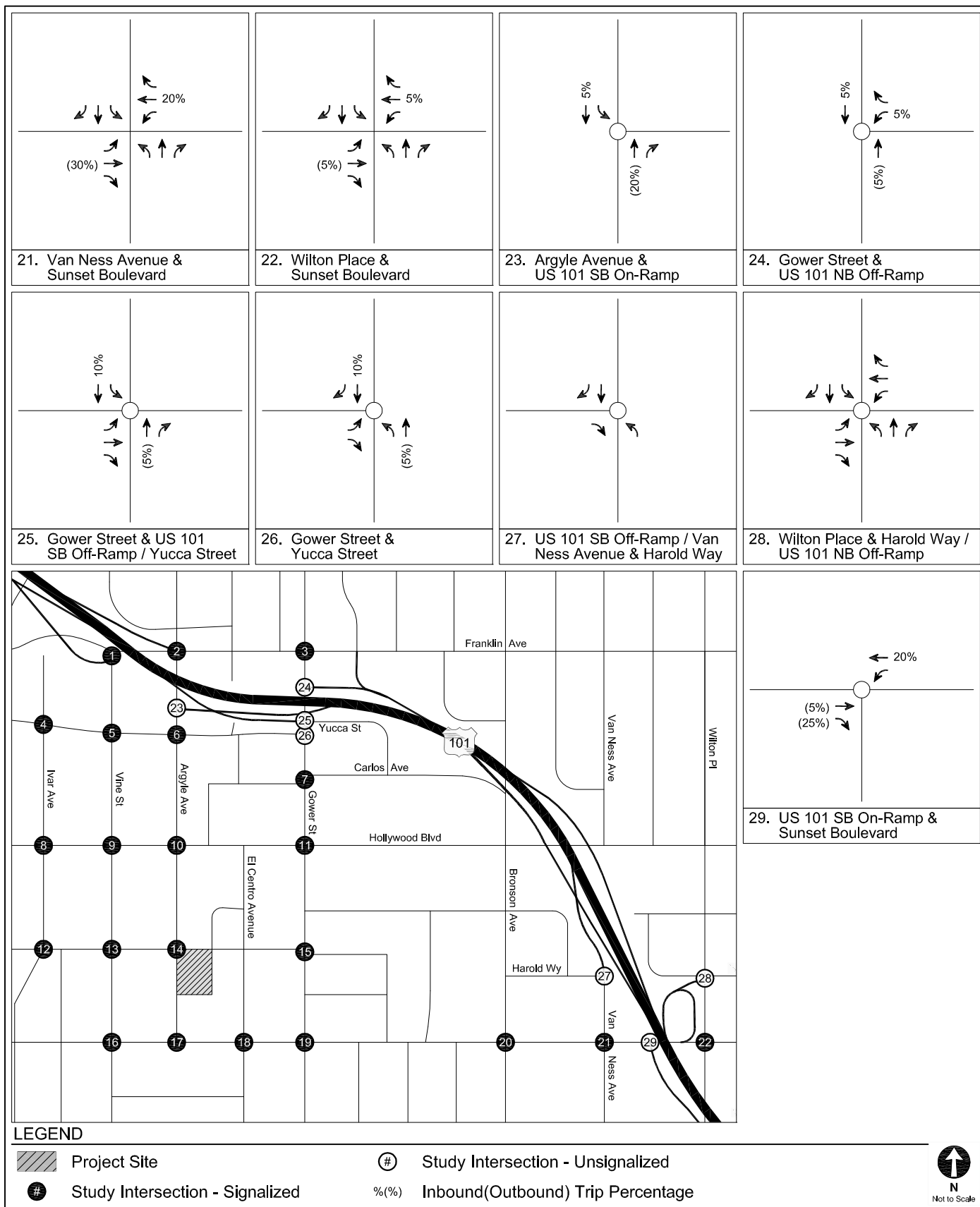
The Project trip generation estimates summarized in Table 8 and the trip distribution patterns shown in Figures 8A and 8B were used to assign the Project-generated traffic through the study intersections. Figure 9 illustrates the Project-only traffic volumes at the study intersections during typical weekday morning and afternoon peak hours.





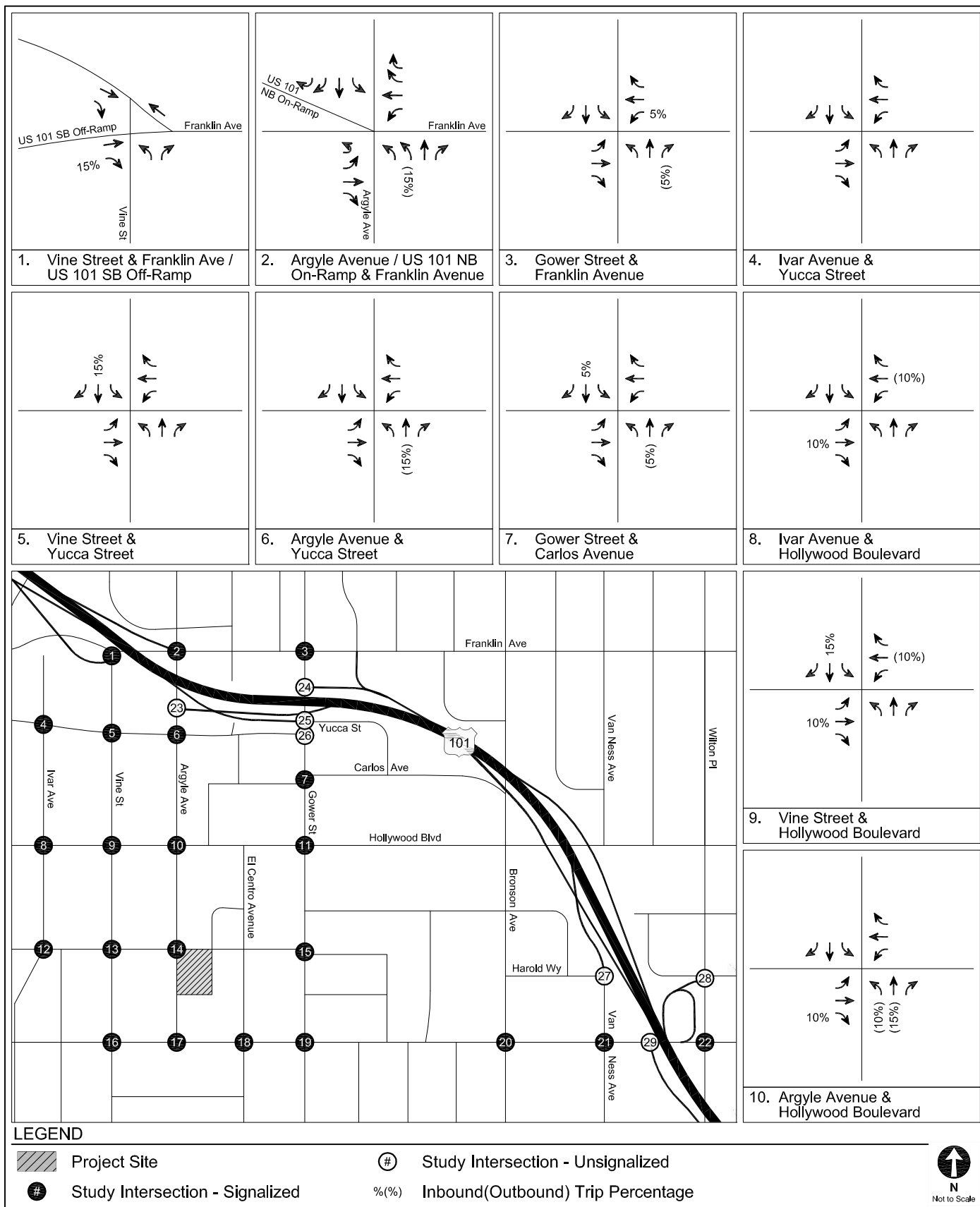
TRIP DISTRIBUTION
RESIDENTIAL

FIGURE
8A (CONT.)



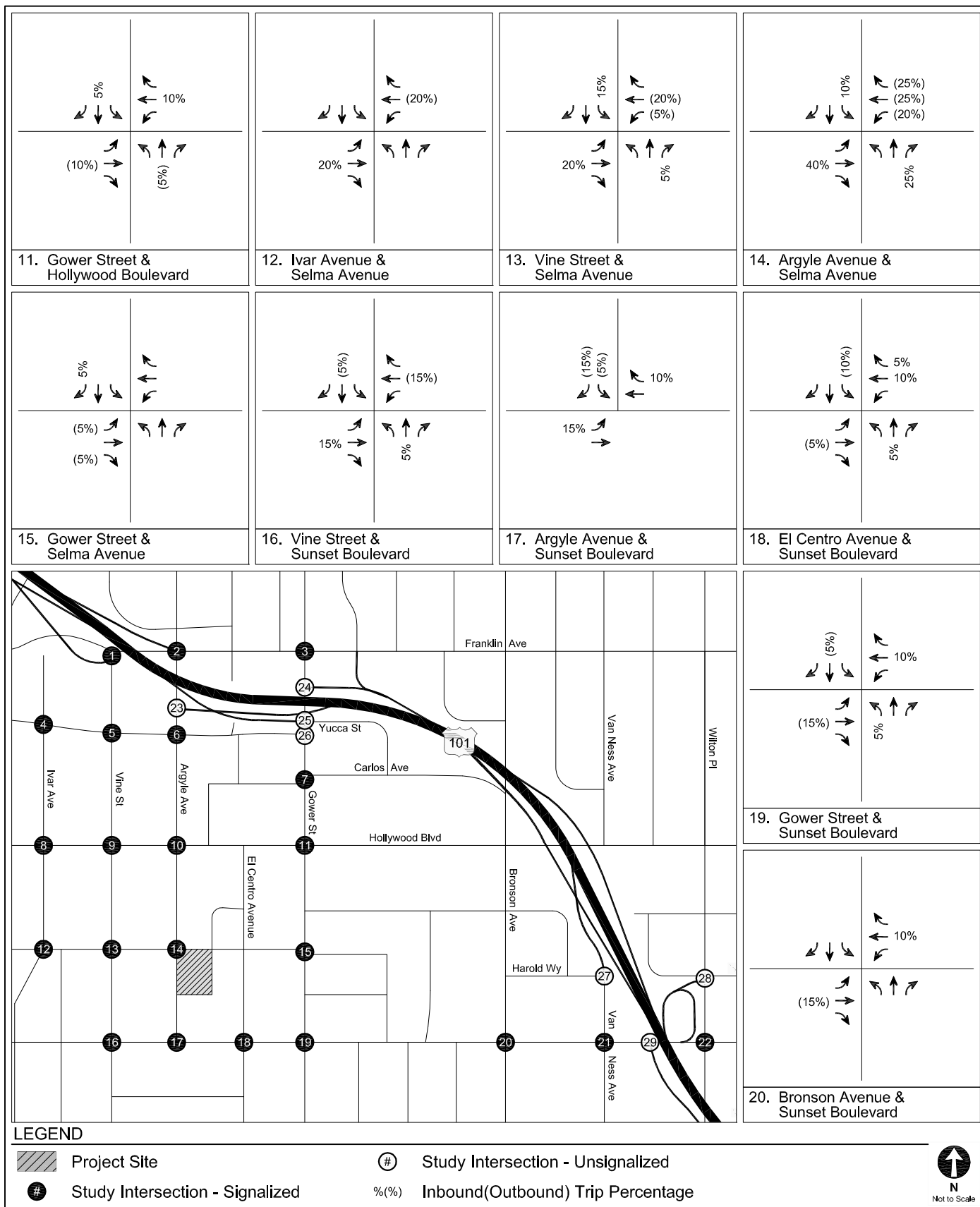
TRIP DISTRIBUTION
RESIDENTIAL

FIGURE
8A (CONT.)



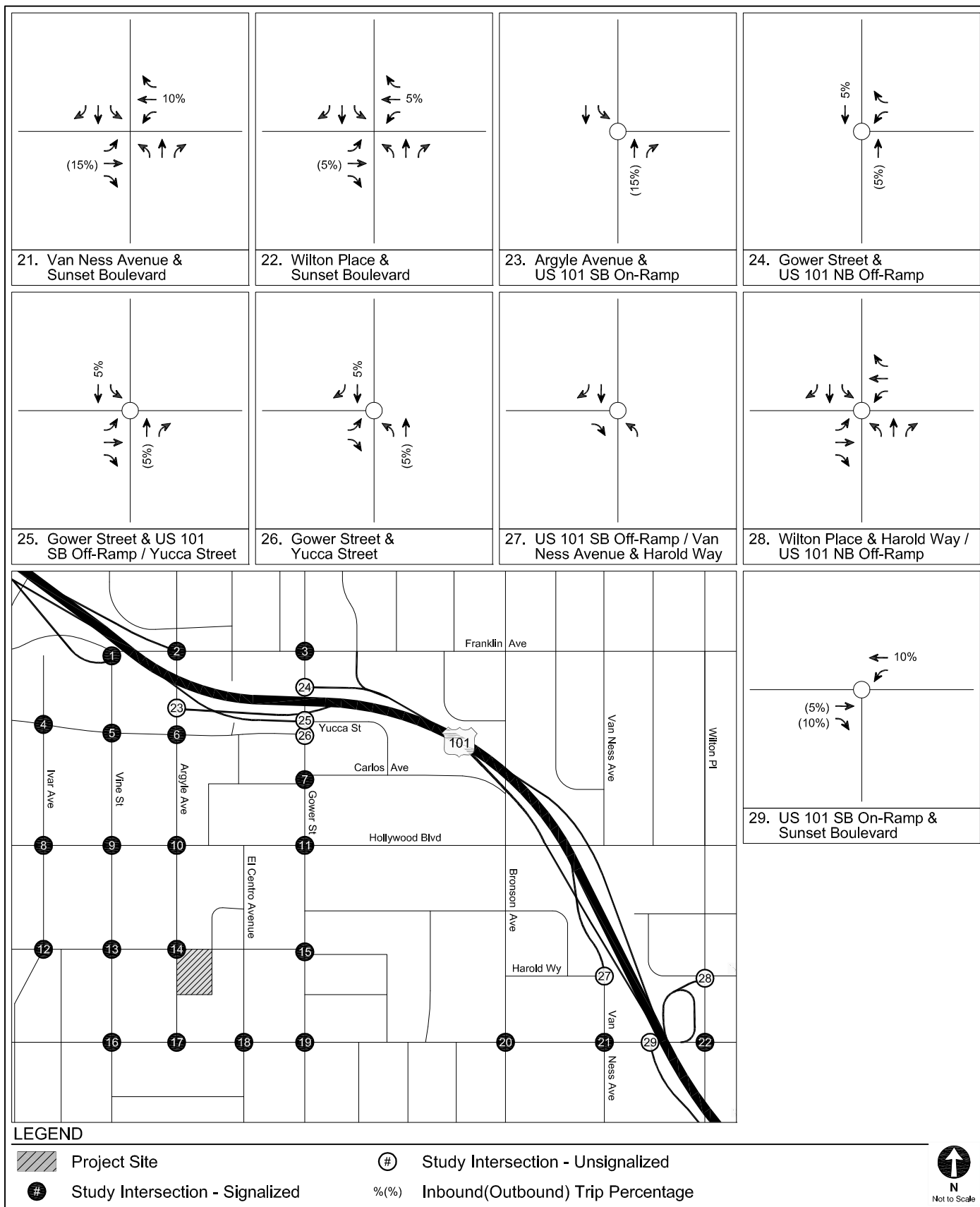
TRIP DISTRIBUTION
COMMERCIAL

FIGURE
8B



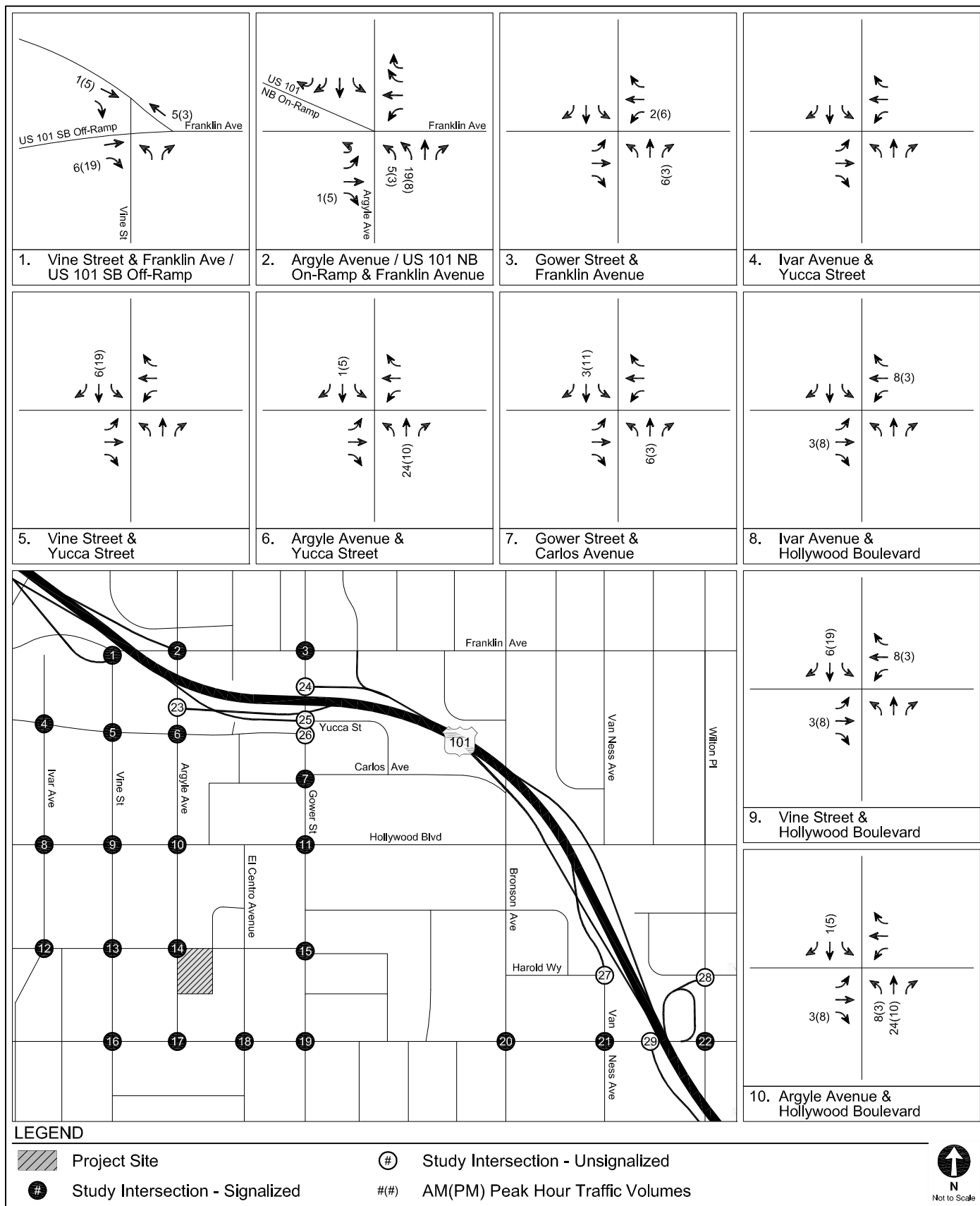
TRIP DISTRIBUTION
COMMERCIAL

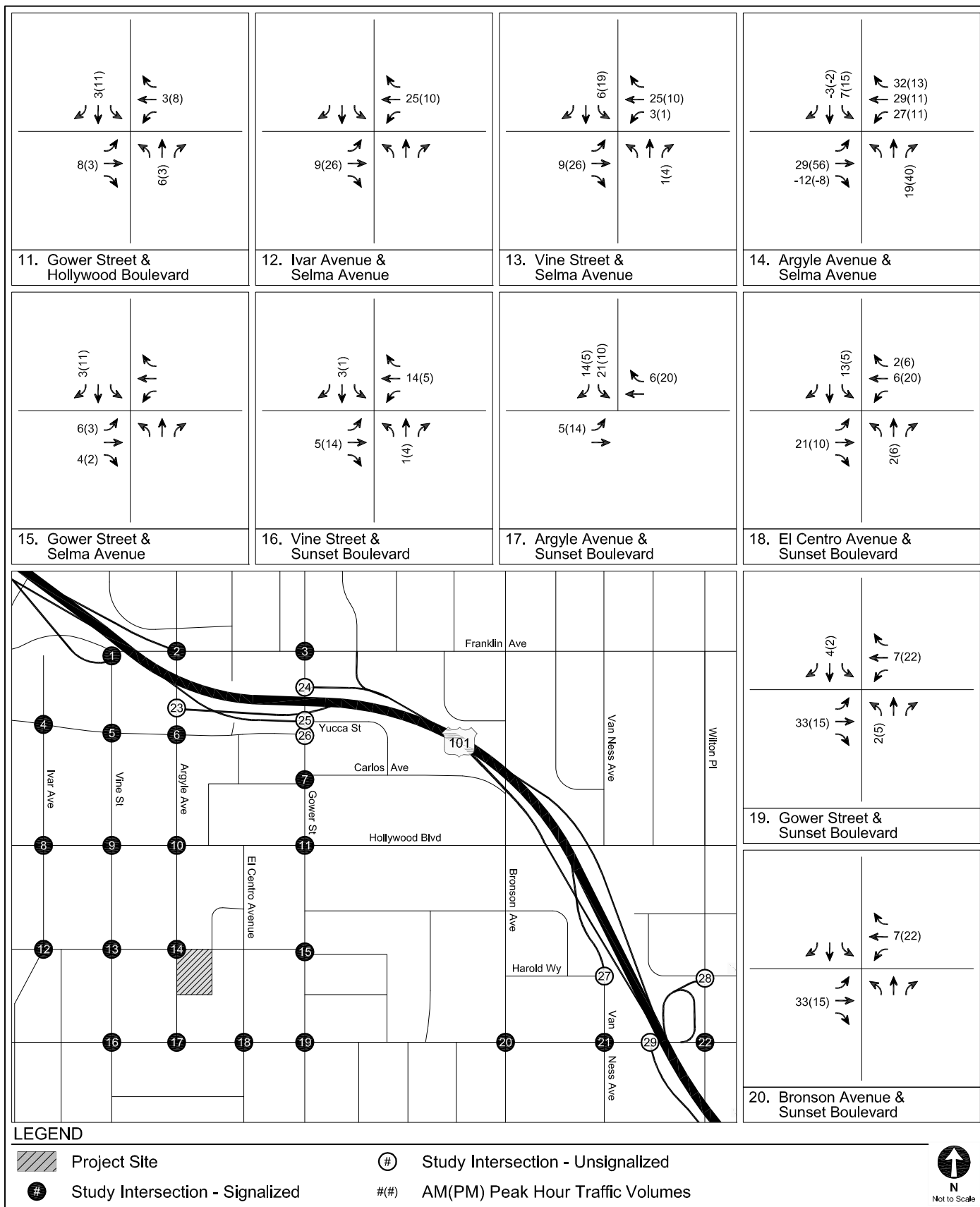
FIGURE
8B (CONT.)



TRIP DISTRIBUTION
COMMERCIAL

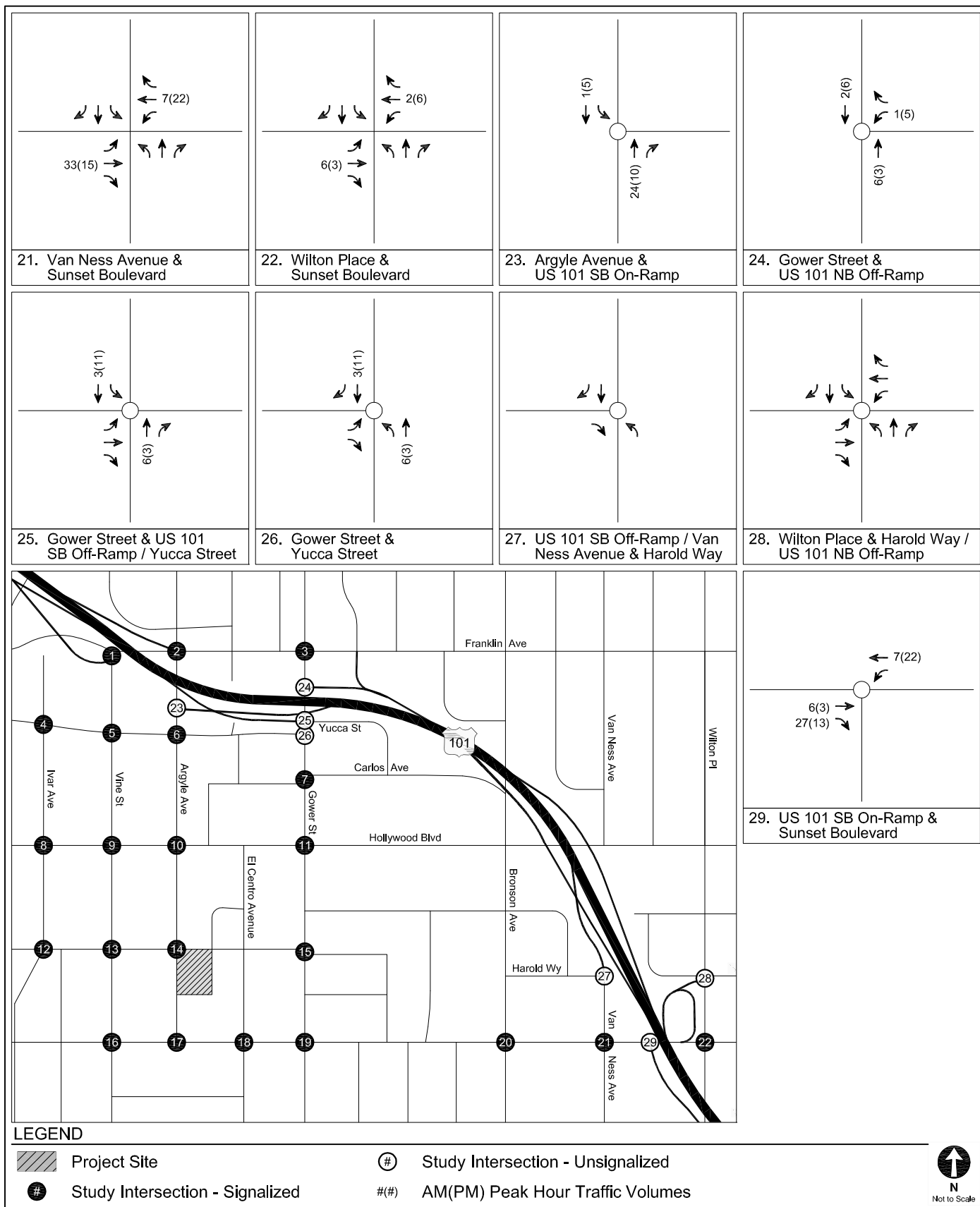
FIGURE
8B (CONT.)





NET PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
9 (CONT.)



NET PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
9 (CONT.)

**TABLE 8
TRIP GENERATION**

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
High-Turnover Restaurant	932	per ksf	127.15	55%	45%	10.81	60%	40%	9.85
Proposed Project									
Apartment Less 15% Transit/Walk-In Adjustment [b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Retail Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 50% Pass-by Reduction [d]	820	9 ksf	384 (77) (46) (131)	6 (1) (1) (2)	3 (1) 0 (1)	9 (2) (1) (3)	16 (3) (2) (6)	17 (3) (2) (6)	33 (6) (4) (12)
Subtotal - Retail			130	2	1	3	5	6	11
Restaurant Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 20% Pass-by Reduction [d]	932	15 ksf	1,907 (381) (229) (259)	89 (18) (11) (12)	73 (15) (9) (10)	162 (33) (20) (22)	89 (18) (11) (12)	59 (12) (7) (8)	148 (30) (18) (20)
Subtotal - Restaurant			1,038	48	39	87	48	32	80
Total - Proposed Project			2,728	74	136	210	147	89	236
Existing Uses to be Removed									
Warehouse Less 15% Transit/Walk-In Adjustment [b]	150	32.634 ksf	116 (17)	8 (1)	2 0	10 (1)	3 0	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office Less 15% Transit/Walk-In Adjustment [b]	710	15.182 ksf	167 (25)	21 (3)	3 0	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial Less 15% Transit/Walk-In Adjustment [b] Less 10% Pass-by Reduction [d]	826 [e]	14 ksf	620 (93) (53)	8 (1) (1)	5 (1) 0	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			474	6	4	10	13	16	29
Total - Existing Uses to be Removed			715	31	9	40	19	38	57
Net New Project Trips			2,013	43	127	170	128	51	179

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood/Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.

Chapter 5

Existing with Project Conditions

This chapter describes the results of the analysis of intersection operating conditions associated with the Project when compared to Existing Conditions. The analysis corresponds with the Existing Conditions data and analysis presented in Chapter 2. The Existing with Project Conditions reflect Existing Conditions with the addition of Project traffic.

EXISTING WITH PROJECT TRAFFIC VOLUMES

The Project-only morning and afternoon peak hour traffic volumes described in Chapter 4 and shown in Figure 9 were added to the existing morning and afternoon peak hour traffic volumes shown in Figure 4. The resulting volumes are illustrated in Figure 10 and represent Existing with Project Conditions after development of the Project under Existing Conditions.

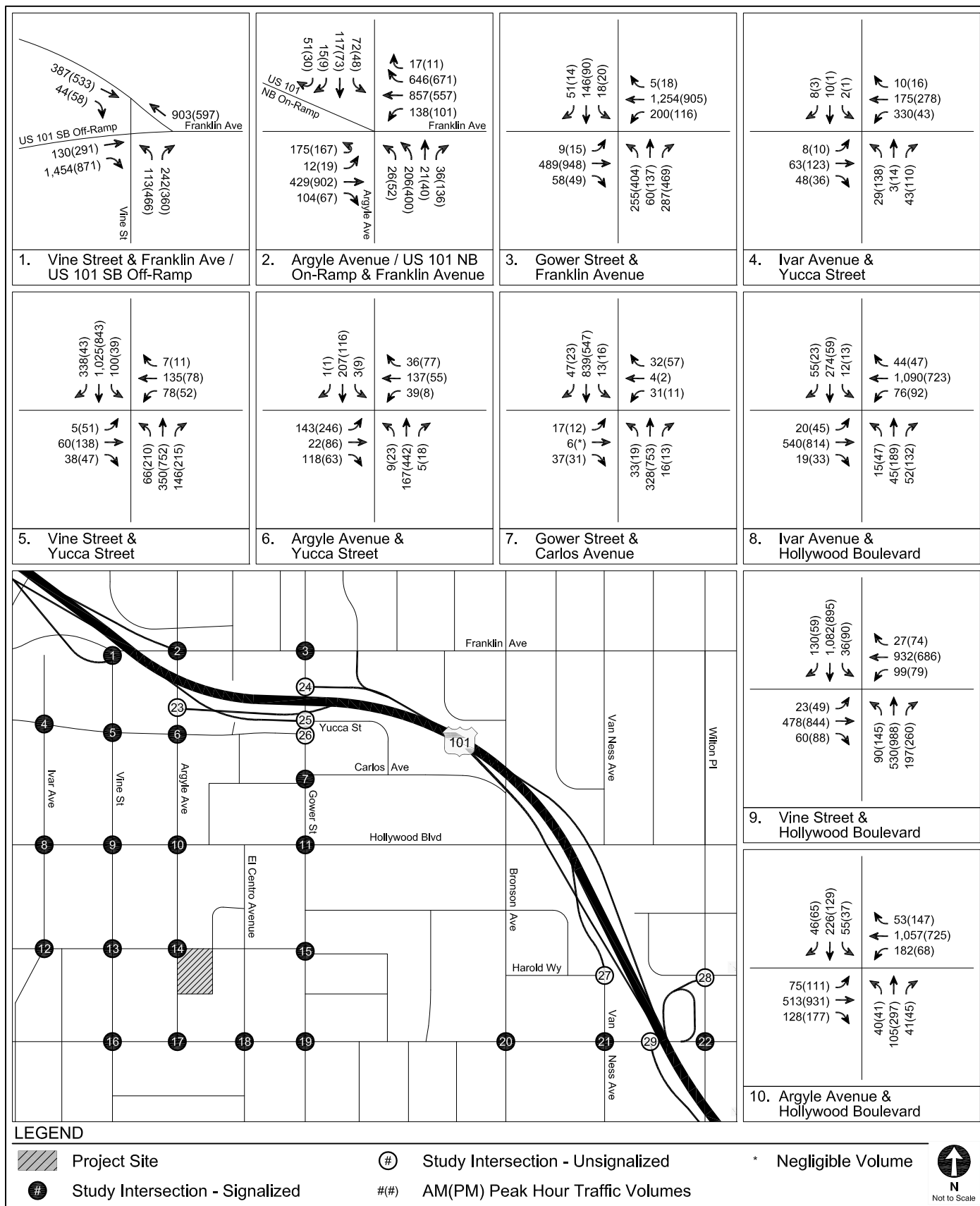
EXISTING WITH PROJECT INTERSECTION LEVELS OF SERVICE

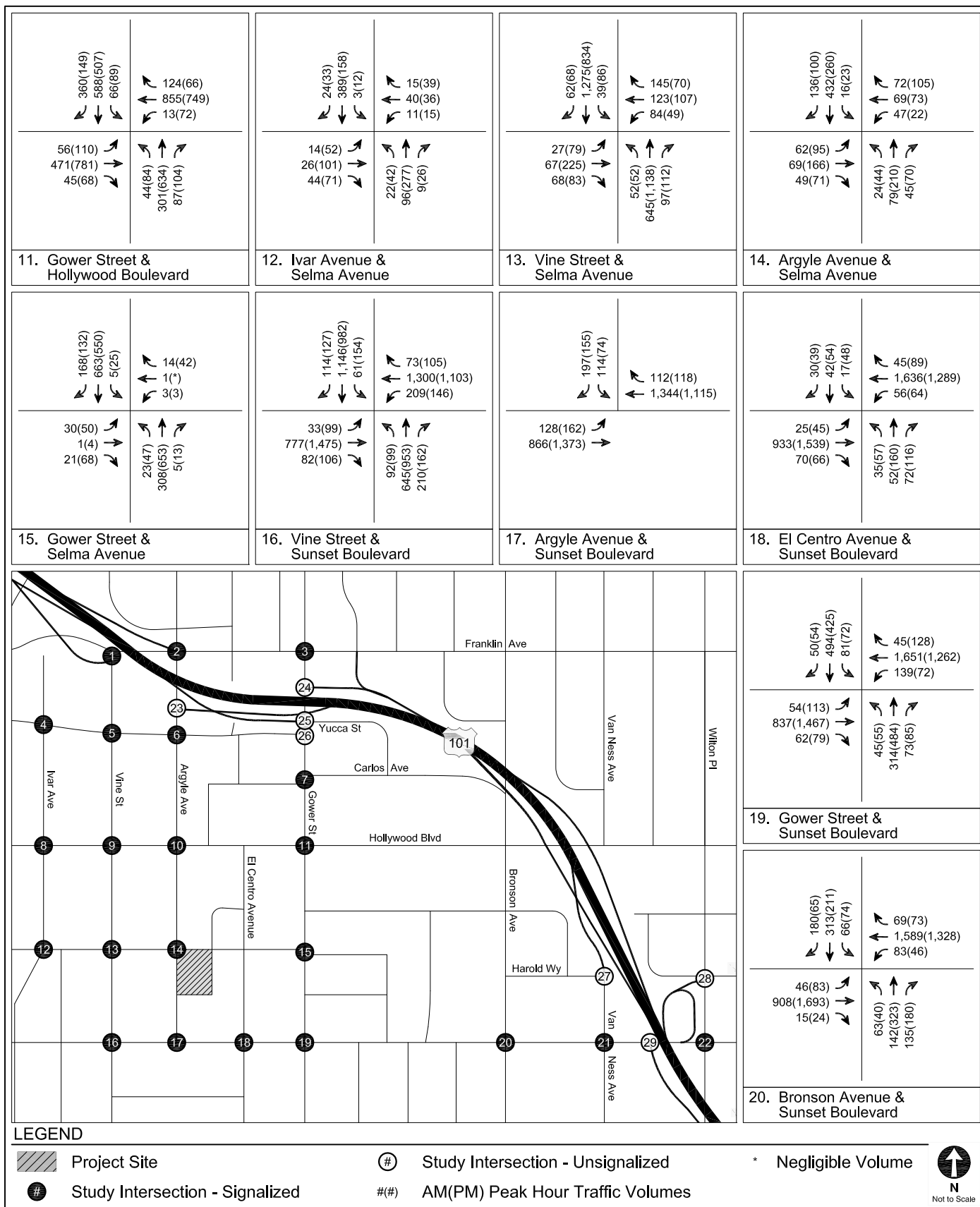
Table 9 summarizes the results of the Existing with Project Conditions during the weekday morning and afternoon peak hours for the 22 signalized study intersections. As shown in Table 9, all of the 22 signalized study intersections are anticipated to continue to operate at LOS D or better during both the morning and afternoon peak hours under Existing with Project Conditions.

SUMMARY

As detailed in Table 9, when measuring the Existing with Project Conditions against Existing Conditions, the incremental increases in the V/C ratios resulting from Project traffic do not exceed the thresholds of the LADOT significant impact criteria at any of the 22 signalized study intersections. Thus, the Project is not anticipated to trigger a significant traffic impact at any of

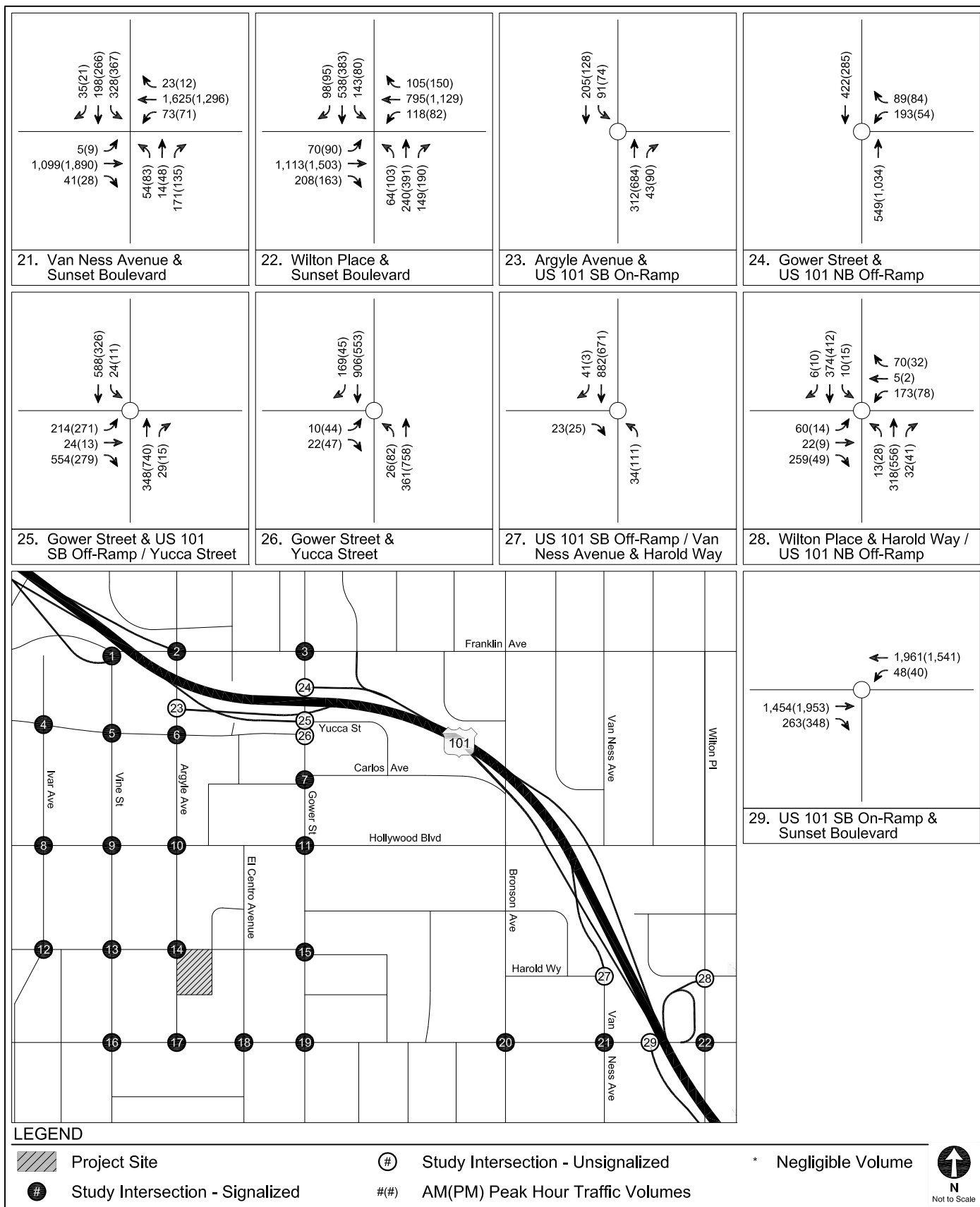
the 22 signalized study intersections under Existing with Project Conditions, and no mitigation measures are required.





EXISTING WITH PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FIGURE
10 (CONT.)



EXISTING WITH PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FIGURE
10 (CONT.)

TABLE 9
EXISTING WITH PROJECT CONDITIONS
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Existing Conditions		Existing with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.318 0.373	A A	0.320 0.375	A A	0.002 0.002	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.739 0.747	C C	0.748 0.751	C C	0.009 0.004	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.653 0.732	B C	0.657 0.736	B C	0.004 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.213 0.267	A A	0.213 0.267	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.489 0.456	A A	0.491 0.462	A A	0.002 0.006	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.187 0.316	A A	0.187 0.319	A A	0.000 0.003	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.332 0.259	A A	0.332 0.259	A A	0.000 0.000	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.526 0.495	A A	0.529 0.498	A A	0.003 0.003	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.736 0.679	D * D *	0.741 0.688	D * D *	0.005 0.009	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.491 0.481	A A	0.497 0.487	A A	0.006 0.006	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.682 0.629	B B	0.685 0.639	B B	0.003 0.010	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.249 0.280	A A	0.255 0.297	A A	0.006 0.017	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.561 0.544	A A	0.577 0.575	A A	0.016 0.031	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.405 0.344	A A	0.461 0.366	A A	0.056 0.022	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.563 0.540	A A	0.572 0.552	A A	0.009 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.784 0.861	D * D *	0.785 0.865	D * D *	0.001 0.004	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.385 0.319	A A	0.397 0.331	A A	0.012 0.012	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.396 0.544	A A	0.407 0.553	A A	0.011 0.009	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	0.742 0.758	C C	0.748 0.762	C C	0.006 0.004	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.668 0.693	B B	0.670 0.697	B B	0.002 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.610 0.737	B C	0.611 0.740	B C	0.001 0.003	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.525 0.582	A A	0.527 0.584	A A	0.002 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

Chapter 6

Future with Project Conditions

This chapter describes the results of the analysis of intersection operating conditions associated with the Project when compared to future cumulative (Future without Project) conditions. The analysis year of 2023 corresponds to the anticipated buildout year of the Project. All future cumulative traffic growth (i.e., ambient and related project traffic growth) and transportation infrastructure improvements described in Chapter 3 are incorporated into this analysis.

FUTURE WITH PROJECT TRAFFIC VOLUMES

The Project-only morning and afternoon peak hour traffic volumes described in Chapter 4 and shown in Figure 9 were added to the Future without Project morning and afternoon peak hour traffic volumes shown in Figure 7. The resulting volumes are illustrated in Figure 11 and represent Future with Project Conditions after development of the Project in the year 2023.

FUTURE WITH PROJECT INTERSECTION LEVELS OF SERVICE

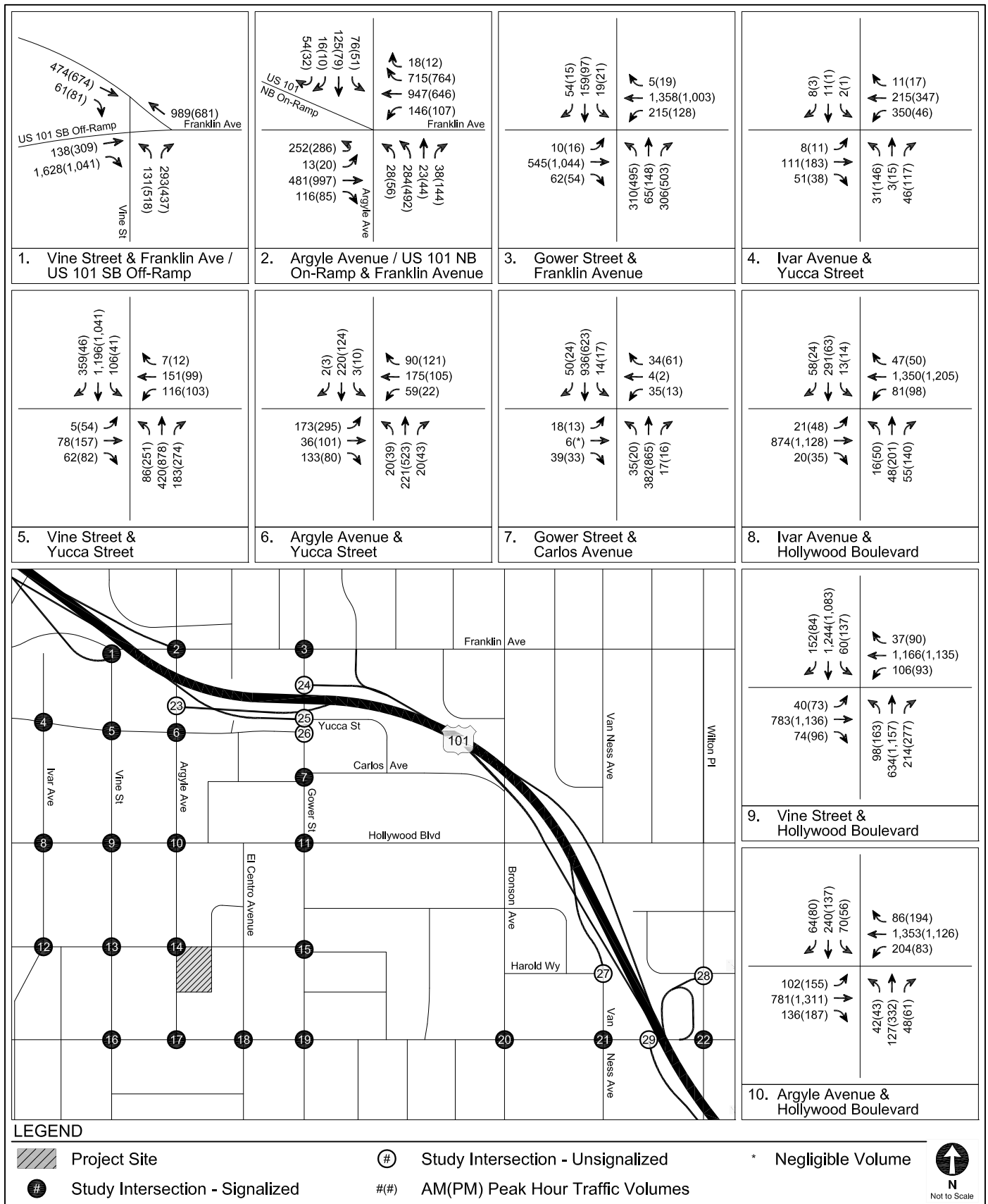
Table 10 summarizes the results of the Future with Project Conditions during the weekday morning and afternoon peak hours for the 22 signalized study intersections. As shown in Table 10, 17 of the 22 signalized study intersections are anticipated to continue to operate at LOS D or better during both the morning and afternoon peak hours under Future with Project Conditions. The following five intersections are anticipated to continue to operate at LOS E or F during at least one of the analyzed peak hours:

2. Argyle Avenue & Franklin Avenue/US 101 Northbound On-Ramp (afternoon peak hour)
9. Vine Street & Hollywood Boulevard (morning and afternoon peak hours)
16. Vine Street & Sunset Boulevard (morning and afternoon peak hours)

-
19. Gower Street & Sunset Boulevard (morning and afternoon peak hours)
 21. Van Ness Avenue & Sunset Boulevard (afternoon peak hour)

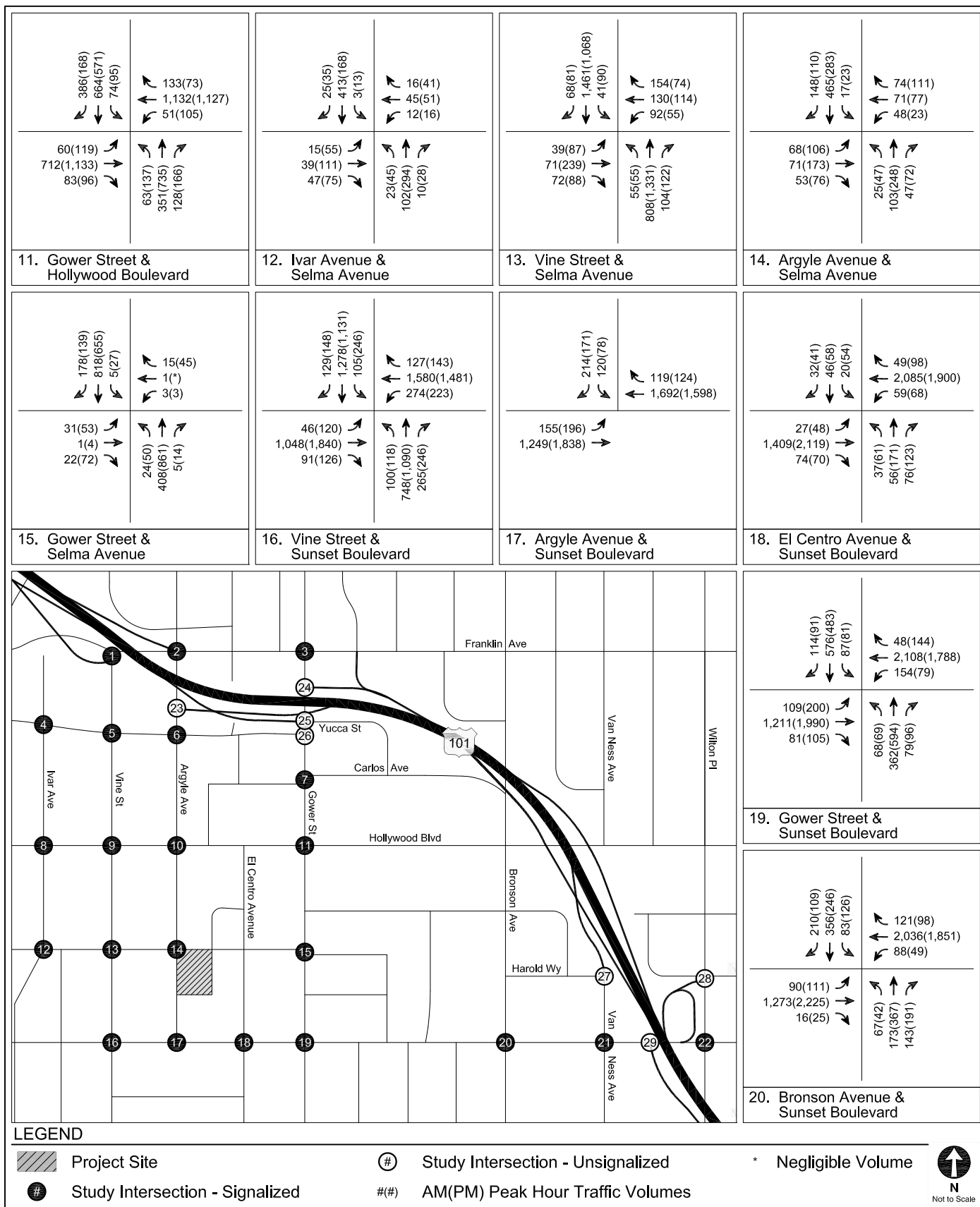
SUMMARY

As detailed in Table 10, when measuring the Future with Project Conditions against Future without Project Conditions, the incremental increases in the V/C ratios resulting from Project traffic do not exceed the thresholds of the LADOT significant impact criteria at any of the 22 signalized study intersections. Thus, the Project is not anticipated to trigger a significant traffic impact at any of the 22 signalized study intersections under Future with Project Conditions, and no mitigation measures are required.



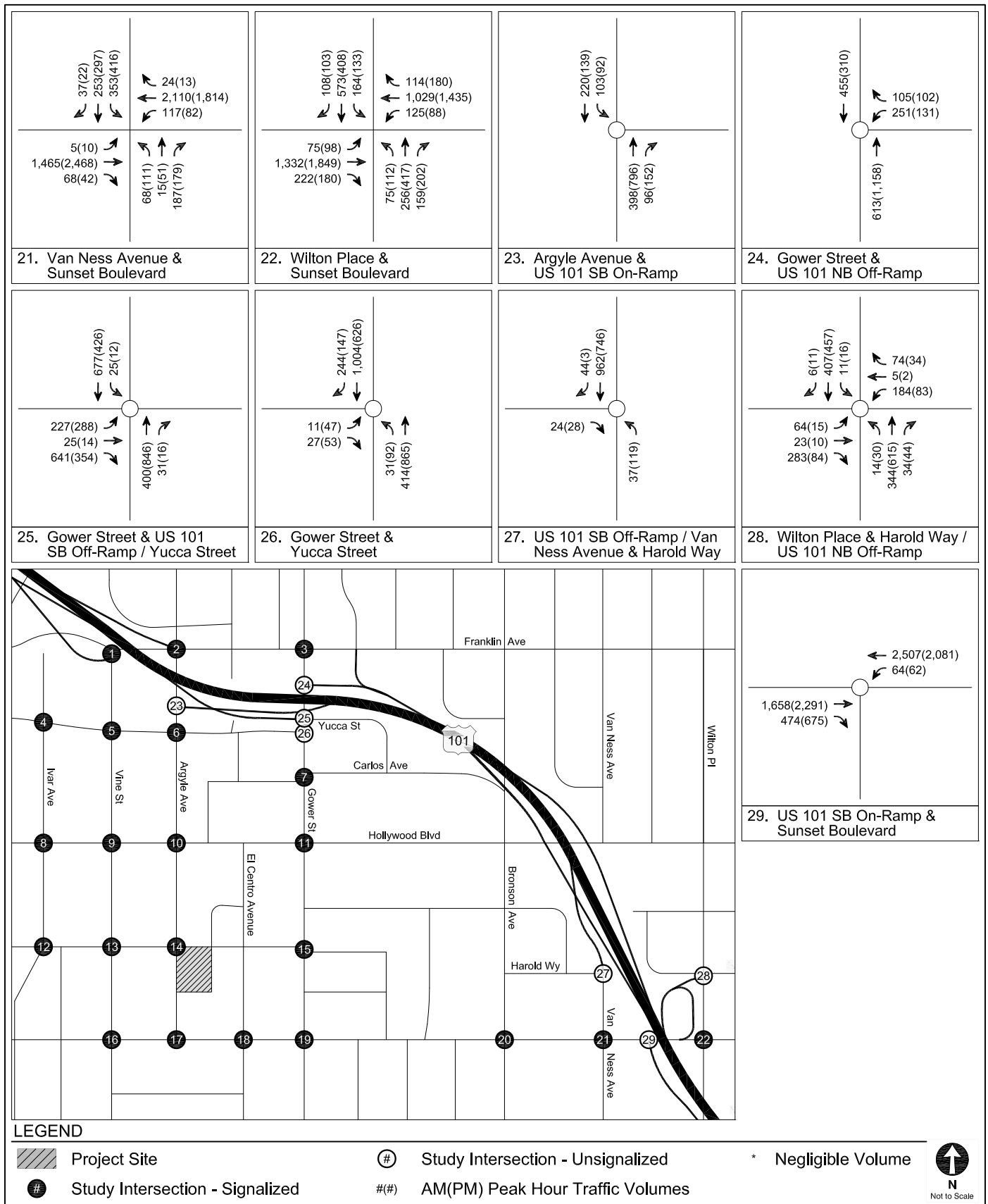
FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE
11



FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE
11 (CONT.)



FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE
11 (CONT.)

TABLE 10
FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.369 0.445	A A	0.371 0.446	A A	0.002 0.001	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.888 0.943	D E	0.897 0.947	D E	0.009 0.004	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.713 0.804	C D	0.717 0.808	C D	0.004 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.262 0.325	A A	0.262 0.325	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.603 0.597	B A	0.605 0.603	B B	0.002 0.006	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.279 0.453	A A	0.281 0.456	A A	0.002 0.003	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.375 0.306	A A	0.376 0.307	A A	0.001 0.001	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.629 0.621	B B	0.632 0.623	B B	0.003 0.002	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.904 0.897	F * F *	0.909 0.906	F * F *	0.005 0.009	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.630 0.695	B B	0.636 0.702	B C	0.006 0.007	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.843 0.843	D D	0.847 0.852	D D	0.004 0.009	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.279 0.307	A A	0.285 0.325	A A	0.006 0.018	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.645 0.628	B B	0.662 0.659	B B	0.017 0.031	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.443 0.383	A A	0.499 0.405	A A	0.056 0.022	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.685 0.631	B B	0.695 0.643	B B	0.010 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.957 1.109	F * F *	0.960 1.114	F * F *	0.003 0.005	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.485 0.449	A A	0.497 0.465	A A	0.012 0.016	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.507 0.695	A B	0.518 0.705	A C	0.011 0.010	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	1.007 1.028	F F	1.013 1.033	F F	0.006 0.005	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.860 0.885	D D	0.861 0.889	D D	0.001 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.746 0.940	C E	0.747 0.943	C E	0.001 0.003	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.605 0.737	B C	0.606 0.739	B C	0.001 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

Chapter 7

Unsignalized Intersection Analysis

As described in Chapter 1, the seven unsignalized study intersections were analyzed using the HCM methodology to determine the overall intersection delay under both Existing and Future Conditions. Based on *Transportation Impact Study Guidelines*, if based on the estimated overall intersection delay, an unsignalized intersection is projected to operate at LOS E or F under Future with Project Conditions, a signal warrant analysis should be conducted to evaluate the potential installation of a new traffic signal. The signal warrant analysis, if necessary, would follow the guidelines set forth in *Manual of Policies and Procedures* (LADOT, December 2008) and *California Manual on Uniform Traffic Control Devices* (Caltrans, 2012) (California MUTCD).

INTERSECTION LEVELS OF SERVICE

Tables 11 and 12 summarize the weekday morning and afternoon peak hour delay and corresponding LOS for the seven unsignalized intersections under Existing and Future Conditions.

As shown in Table 11, five of the seven unsignalized study intersections are anticipated to operate at LOS D or better during both the morning and afternoon peak hours under both Existing and Existing with Project Conditions. The remaining two intersections, Gower Street & US 101 Southbound Off-Ramp/Yucca Street (Intersection #25) and US 101 Southbound On-Ramp & Sunset Boulevard (Intersection #29), operate at LOS F during at least one of the analyzed peak hours.

As shown in Table 12, three of the seven unsignalized intersections are anticipated to operate at LOS B or better during both the morning and afternoon peak hours under both Future without Project and Future with Project Conditions. The remaining four intersections listed below are anticipated to operate at LOS E or F during both the morning and afternoon peak hours:

-
24. Gower Street & US 101 Northbound Off-Ramp
 25. Gower Street & US 101 Southbound Off-Ramp/Yucca Street
 26. Gower Street & Yucca Street
 29. US 101 Southbound On-Ramp & Sunset Boulevard

Therefore, further signal warrant analyses were conducted for the four unsignalized intersections above for both Existing and Future Conditions.

Detailed LOS worksheets are provided in Appendix D.

SIGNAL WARRANT ANALYSIS

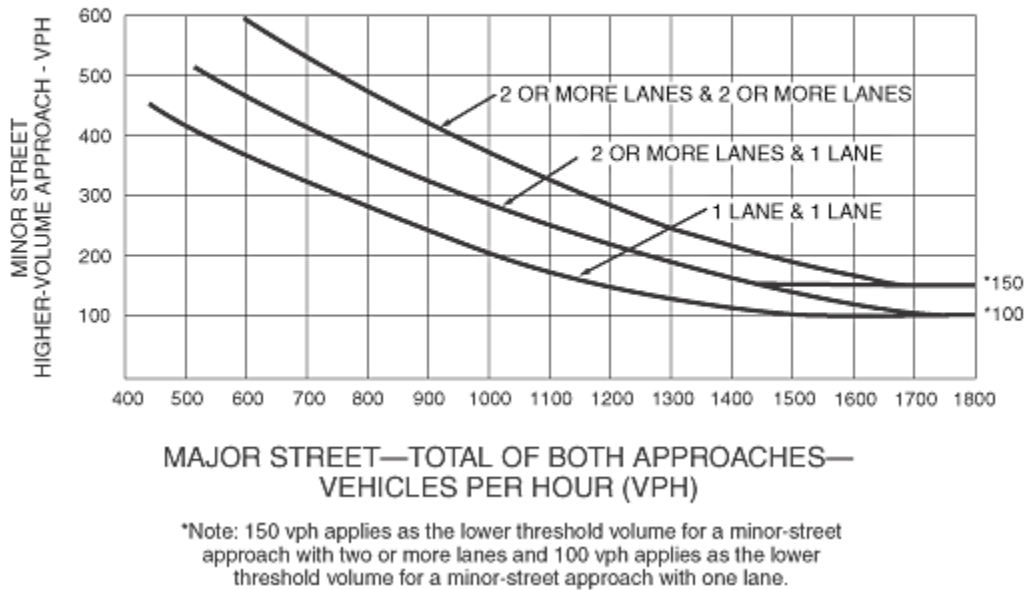
Of the seven unsignalized study intersections, four intersections are projected to operate at LOS E or F during both the morning and afternoon peak hours under Future Conditions, with and without addition of the Project, and were therefore subject to signal warrant analyses to determine whether the projected volumes at the intersection warrant the installation of a traffic signal control.

The intersections were analyzed according to Warrant 3 (peak hour). The following methodologies, as quoted from the California MUTCD, were used to evaluate signal warrants at the intersection:

Warrant 3, Peak-Hour Vehicular Volume Warrant

Signal Warrant 3 is intended for use at a location where traffic conditions are such that for a minimum of one hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. Combined volumes for both approaches of the major street are included while only the volume from the higher minor street approach is included. At an intersection with a high volume of left-turn traffic from the major street, the analysis may include the major street left-turn volumes plus the minor street approach volume as the total "minor street" volume. The warrant is satisfied if traffic volumes for any one hour of an average day exceed the plotted lines shown in the following figure.

Figure 4C-3. Warrant 3, Peak Hour



As summarized in Table 13, the unsignalized intersection of Gower Street & US 101 Southbound Off-Ramp/Yucca Street meets the minimum peak hour traffic volume and delay thresholds of Warrant 3 under Existing and Future Conditions, with and without the addition of Project traffic. Detailed signal warrant worksheets are provided in Appendix E.

The satisfaction of the warrant threshold alone, however, is not the same as a significance threshold for determining a significant impact and does not in and of itself dictate the requirement of the installation of a traffic control signal. That decision is made by LADOT and Caltrans, which would consider additional factors such as spacing with adjacent intersections, interruption of traffic flow on the major streets, etc. Moreover, the above analysis shows the Project does not create the need for a traffic signal at the intersection of Gower Street & US 101 Southbound Off-Ramp/Yucca Street, as traffic volumes without the Project will also result in LOS F conditions.

TABLE 11
EXISTING WITH PROJECT CONDITIONS
UNSIGNALIZED INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Existing		Existing with Project	
			Delay	LOS	Delay	LOS
23.	Argyle Avenue & US 101 Southbound On-Ramp	AM PM	8.2 9.7	A A	8.2 9.7	A A
24.	Gower Street & US 101 Northbound Off-Ramp	AM PM	27.7 31.2	D D	28.3 32.5	D D
25.	Gower Street & US 101 Southbound Off-Ramp/Yucca Street	AM PM	76.1 65.4	F F	78.6 70.1	F F
26.	Gower Street & Yucca Street	AM PM	28.3 31.5	D D	28.5 32.2	D D
27.	US 101 Southbound Off-Ramp/Van Ness Avenue & Harold Way	AM PM	13.1 10.3	B B	13.1 10.3	B B
28.	Wilton Place & Harold Way/US 101 Northbound Off-Ramp	AM PM	13.0 7.6	B A	13.0 7.6	B A
29.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	32.0 74.4	D F	33.5 76.6	D F

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 4 (HCM methodology).

TABLE 12
FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
UNSIGNALIZED INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Future without Project		Future with Project	
			Delay	LOS	Delay	LOS
23.	Argyle Avenue & US 101 Southbound On-Ramp	AM PM	8.7 10.7	A B	8.7 10.7	A B
24.	Gower Street & US 101 Northbound Off-Ramp	AM PM	52.7 92.9	F F	54.8 102.0	F F
25.	Gower Street & US 101 Southbound Off-Ramp/Yucca Street	AM PM	162.6 196.4	F F	167.6 207.8	F F
26.	Gower Street & Yucca Street	AM PM	36.7 50.5	E F	37.0 52.1	E F
27.	US 101 Southbound Off-Ramp/Van Ness Avenue & Harold Way	AM PM	14.5 11.0	B B	14.5 11.0	B B
28.	Wilton Place & Harold Way/US 101 Northbound Off-Ramp	AM PM	14.3 7.8	B A	14.3 7.8	B A
29.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	73.9 OVRFLW	F F	79.2 OVRFLW	F F

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 4 (HCM methodology).

**TABLE 13
SIGNAL WARRANT ANALYSIS**

No.	Intersection	Peak Hour	Peak Hour Warrant Met			
			Existing Conditions	Existing with Project Conditions	Future without Project Conditions	Future with Project Conditions
24.	Gower Street & US 101 Northbound Off-Ramp	AM PM	NO	NO	NO	NO
25.	Gower Street & US 101 Southbound Off-Ramp/Yucca Street	AM PM	YES	YES	YES	YES
26.	Gower Street & Yucca Street	AM PM	NO	NO	NO	NO
29.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	NO	NO	NO	NO

Chapter 8

Supermarket Option

This chapter provides the analysis of the Supermarket Option, should the ground floor neighborhood-serving commercial space be developed with a 27,000 sf supermarket, as previously described in Chapter 1. The various guidelines, methods, and assumptions mandated by LADOT, wherever applicable, have been used in the preparation of this analysis.

SUPERMARKET OPTION

Trip generation estimates were prepared for the Supermarket Option and are detailed in Table 14. The number of trips expected to be generated by the Supermarket Option was estimated using rates published for apartment and supermarket uses in *Trip Generation, 9th Edition*. Consistent with the assumptions applied to the retail and restaurant uses in Chapter 4, reductions were applied to the supermarket trip generation estimates to account for internal capture, visitors arriving via transit or walking, and pass-by trips.

After applying the appropriate trip reductions and accounting for the removal of the existing uses, the Supermarket Option is anticipated to generate 1,971 net new daily trips, including 117 net new morning peak hour trips (16 inbound, 101 outbound) and 192 net new afternoon peak hour trips (128 inbound, 64 outbound). The distribution patterns shown in Figures 8A and 8B were used to assign the Supermarket Option trips to the study intersections. Figure 12 illustrates the Supermarket Option Project-only volumes at the study intersections during the typical weekday morning and afternoon peak hours.

EXISTING WITH PROJECT CONDITIONS – SUPERMARKET OPTION

The Supermarket Option Project-only morning and afternoon peak hour traffic volumes shown in Figure 12 were added to the existing morning and afternoon peak hour traffic volumes shown in

Figure 4. The resulting volumes are illustrated in Figure 13 and represent Existing with Project Conditions – Supermarket Option.

Table 15 summarizes the results of the Existing with Project Conditions – Supermarket Option during the weekday morning and afternoon peak hours for the 22 study signalized intersections. As shown in Table 15, with the Supermarket Option, the incremental increases in V/C ratios at the 22 study intersections would not exceed the LADOT significant impact thresholds. These results are consistent with the Existing with Project Conditions presented in Chapter 5. Detailed analysis worksheets are provided in Appendix F.

FUTURE WITH PROJECT CONDITIONS – SUPERMARKET OPTION

The Supermarket Option Project-only morning and afternoon peak hour traffic volumes shown in Figure 12 were added to the future morning and afternoon peak hour traffic volumes shown in Figure 7. The resulting volumes are illustrated in Figure 14 and represent Future with Project Conditions – Supermarket Option.

Table 16 summarizes the results of the Future with Project Conditions – Supermarket Option during the weekday morning and afternoon peak hours for the 22 signalized study intersections. As shown in Table 16, with the Supermarket Option, the incremental increases in V/C ratios at the 22 signalized study intersections would not exceed the LADOT significant impact thresholds. These results are consistent with the Future with Project Conditions presented in Chapter 6. Detailed analysis worksheets are provided in Appendix F.

UNSIGNALIZED INTERSECTION ANALYSIS

Tables 17 and 18 summarize the weekday morning and afternoon peak hour delay and corresponding LOS for the seven unsignalized intersections with the Supermarket Option under Existing and Future Conditions.

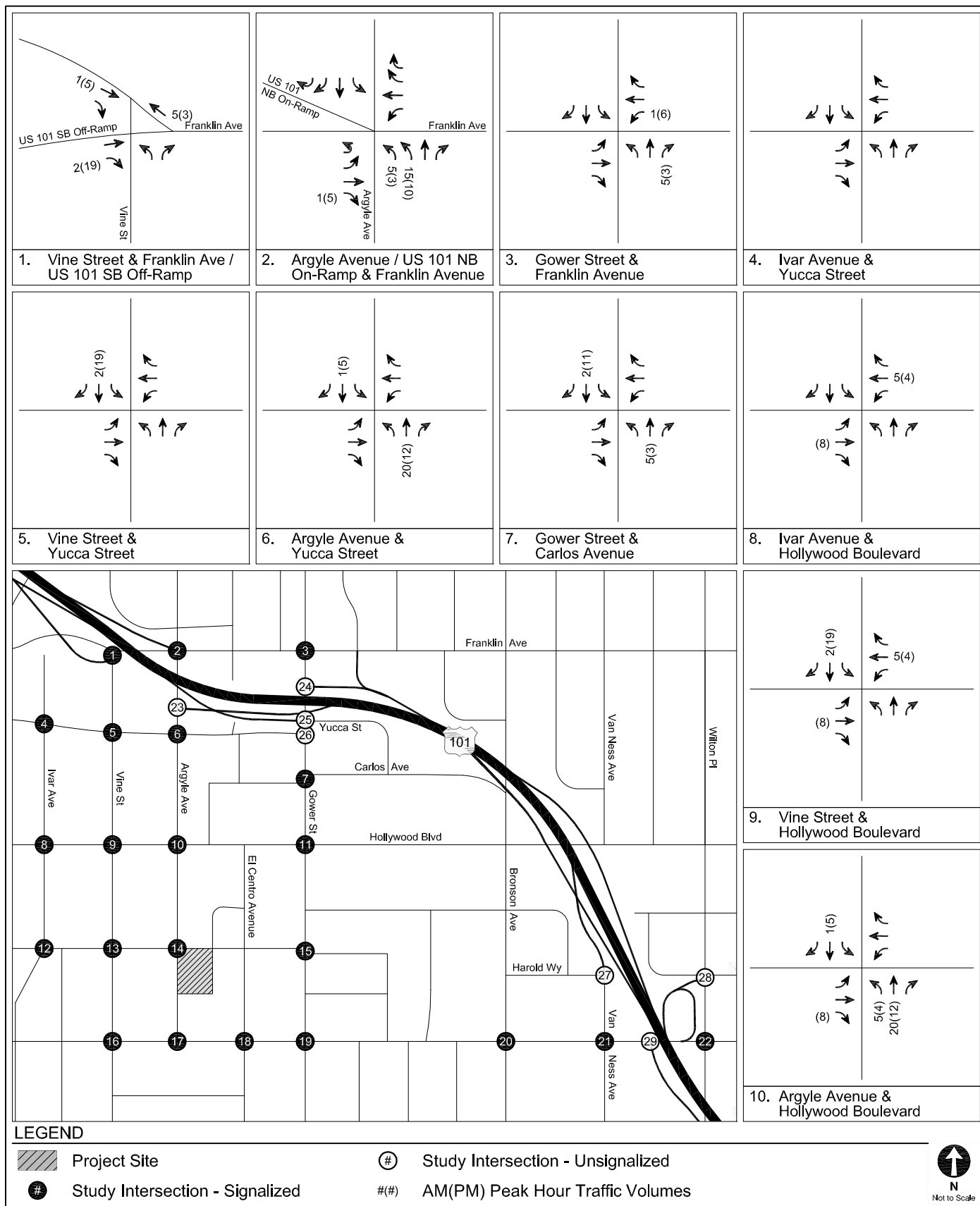
Consistent with the results presented in Chapter 7, two of the seven unsignalized study intersections, Gower Street & US 101 Southbound Off-Ramp/Yucca Street (Intersection #25)

and US 101 Southbound On-Ramp & Sunset Boulevard (Intersection #29), operate at LOS F during at least one of the analyzed peak hours under Existing with Project Conditions – Supermarket Option, as shown in Table 17, and the following four unsignalized study intersections are anticipated to operate at LOS E or F during both the morning and afternoon peak hours under Future with Project Conditions – Supermarket Option, as shown in Table 18:

- 24. Gower Street & US 101 Northbound Off-Ramp
- 25. Gower Street & US 101 Southbound Off-Ramp/Yucca Street
- 26. Gower Street & Yucca Street
- 29. US 101 Southbound On-Ramp & Sunset Boulevard

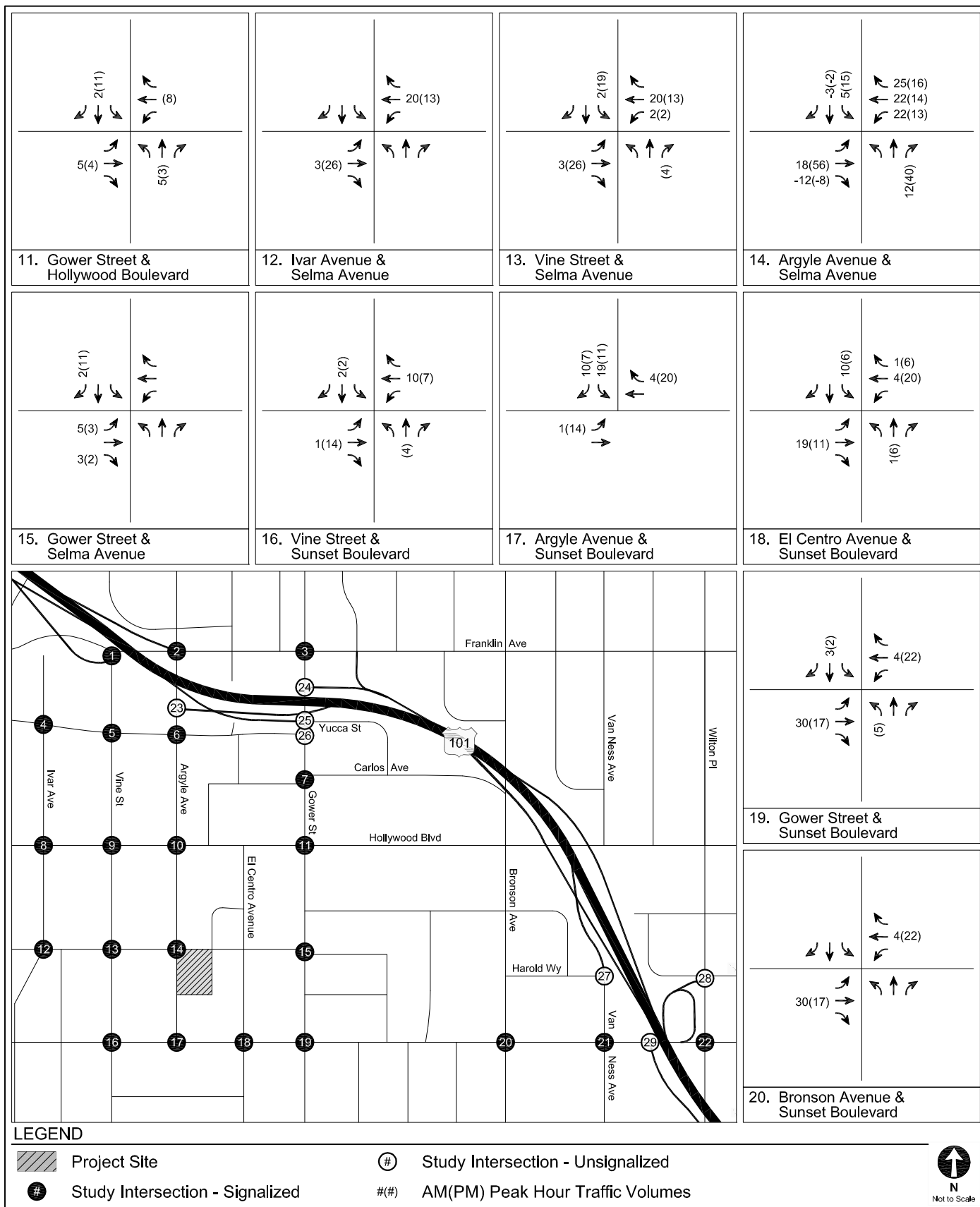
Therefore, further signal warrant analyses were conducted for both Existing and Future Conditions. As shown in Table 19, the intersection of Gower Street & US 101 Southbound Off-Ramp/Yucca Street (Intersection #25) would meet the minimum volume and delay thresholds of Warrant 3 under Existing and Future Conditions, with and without the addition of the Supermarket Option traffic. However, as previously stated in Chapter 7, the satisfaction of the warrant threshold alone, however, does not in and of itself dictate the requirement of the installation of a traffic control signal.

Detailed signal warrant worksheets are provided in Appendix E.



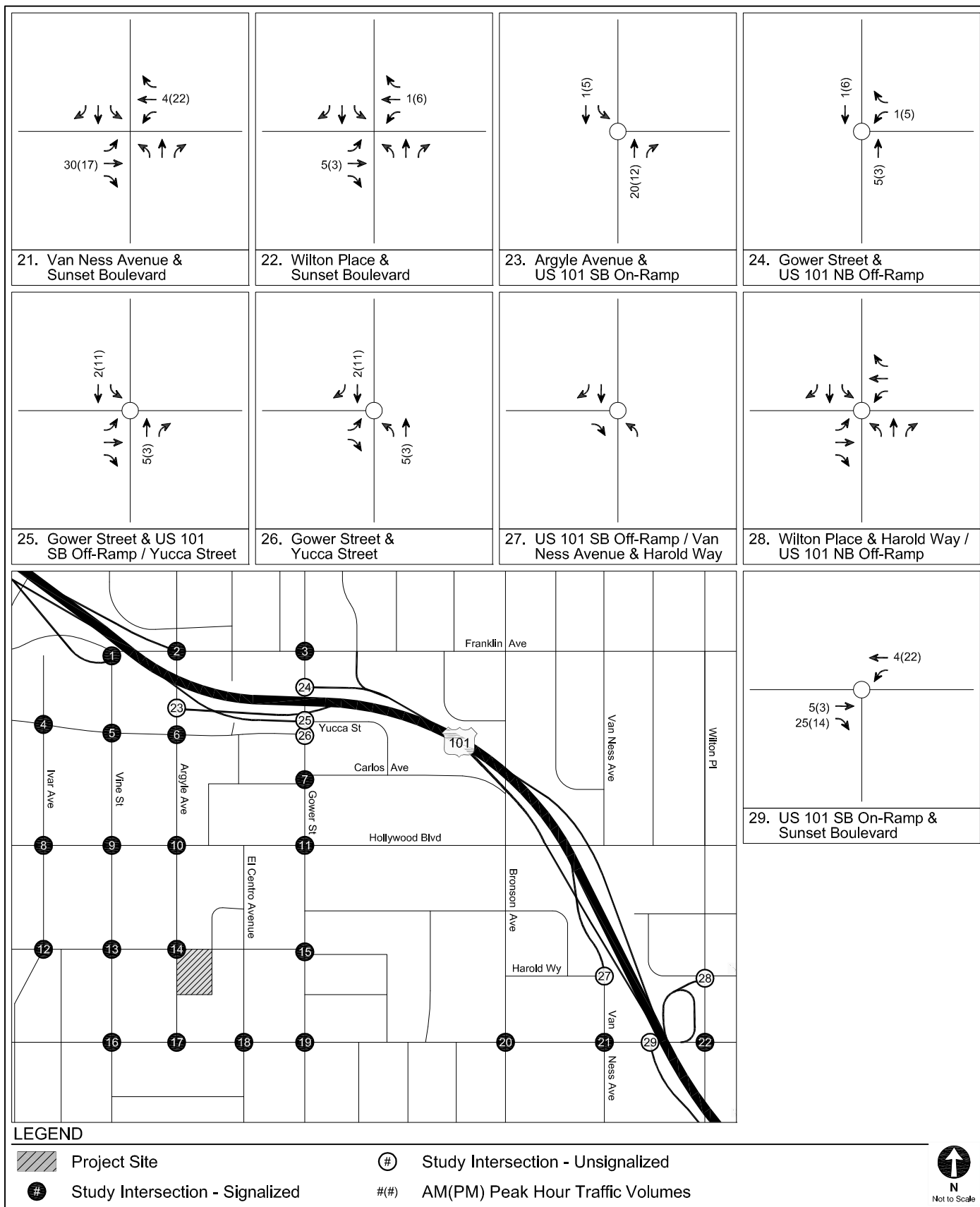
NET PROJECT-ONLY - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
12



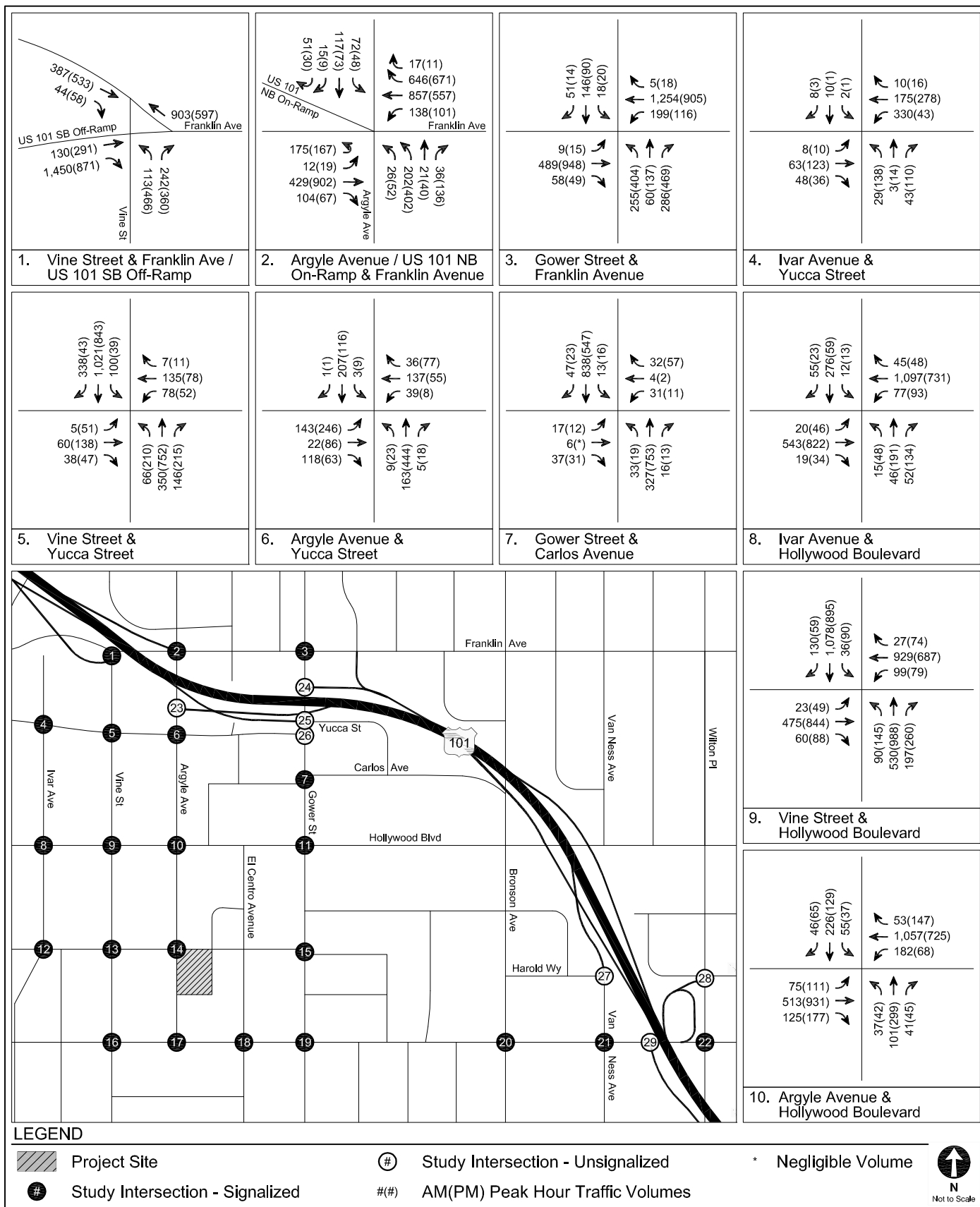
NET PROJECT-ONLY - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

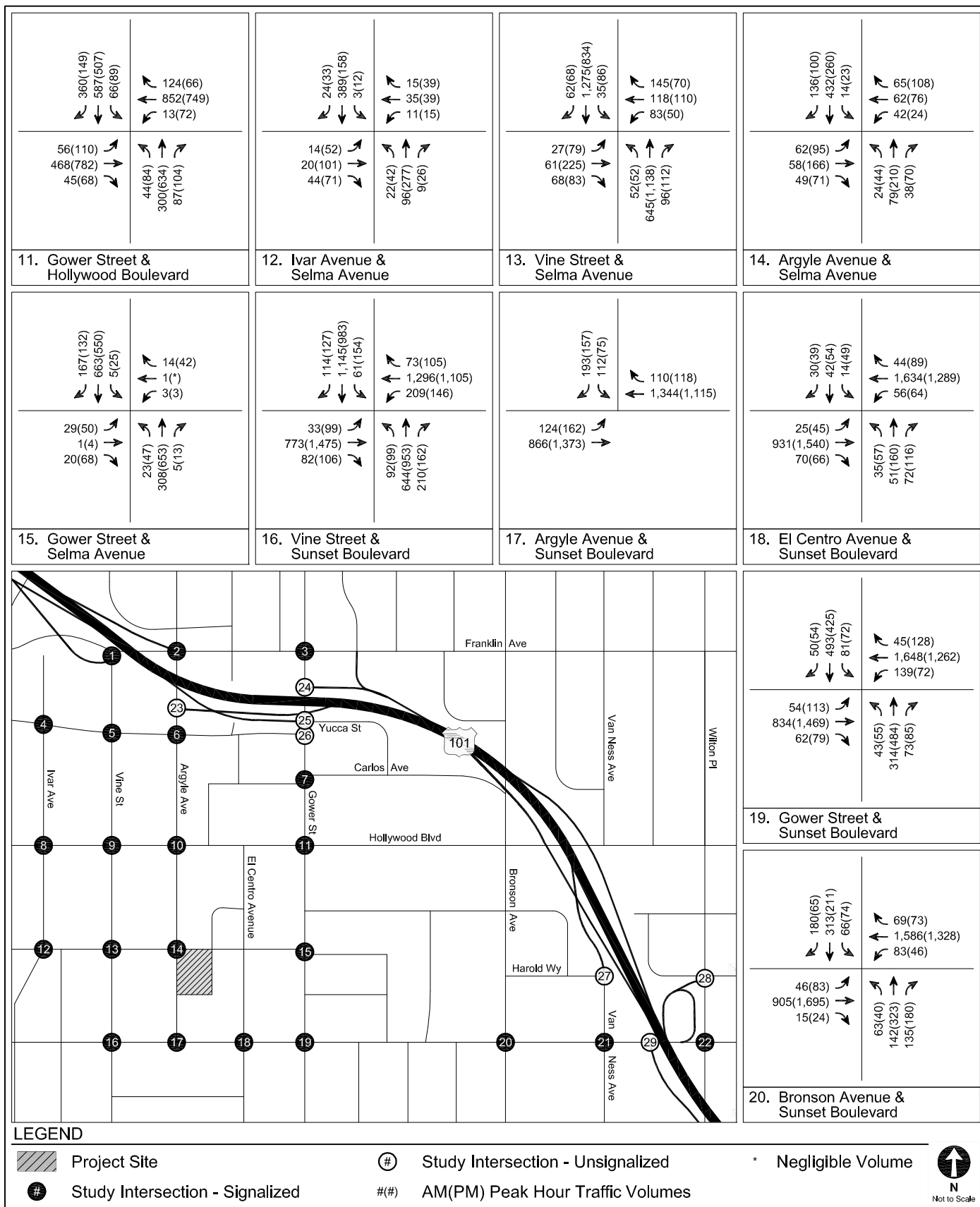
FIGURE
12 (CONT.)



NET PROJECT-ONLY - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

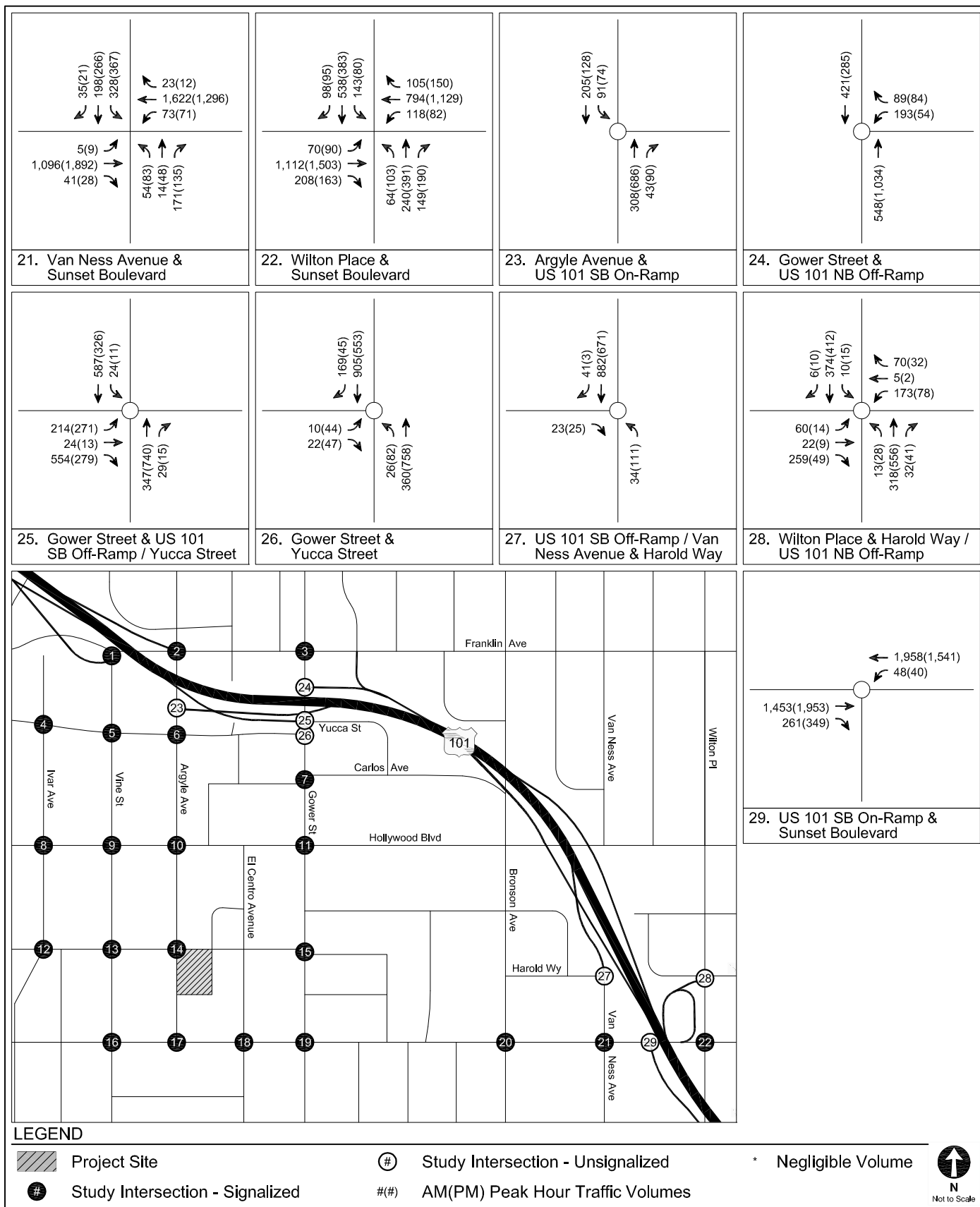
FIGURE
12 (CONT.)





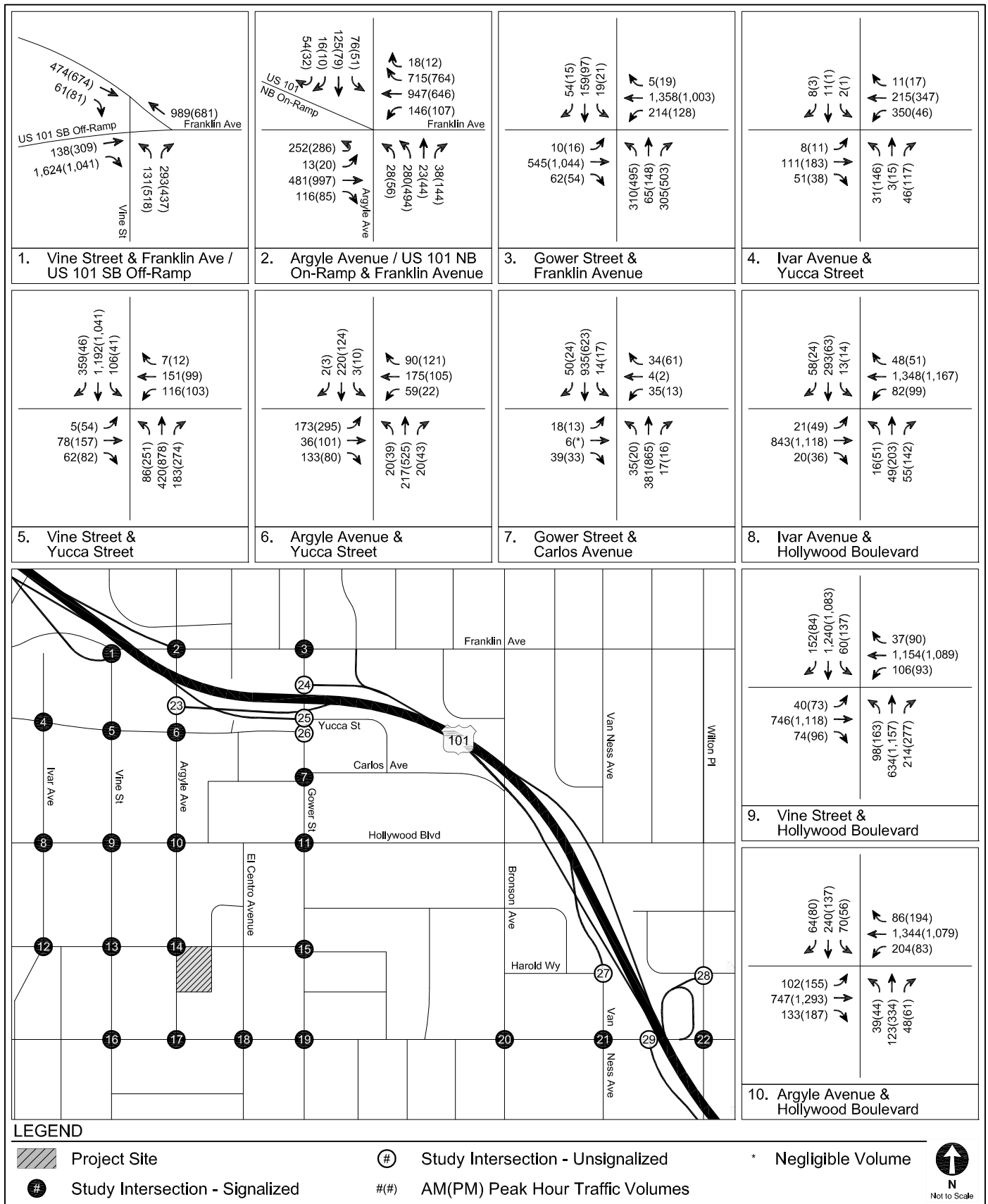
EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
13 (CONT.)



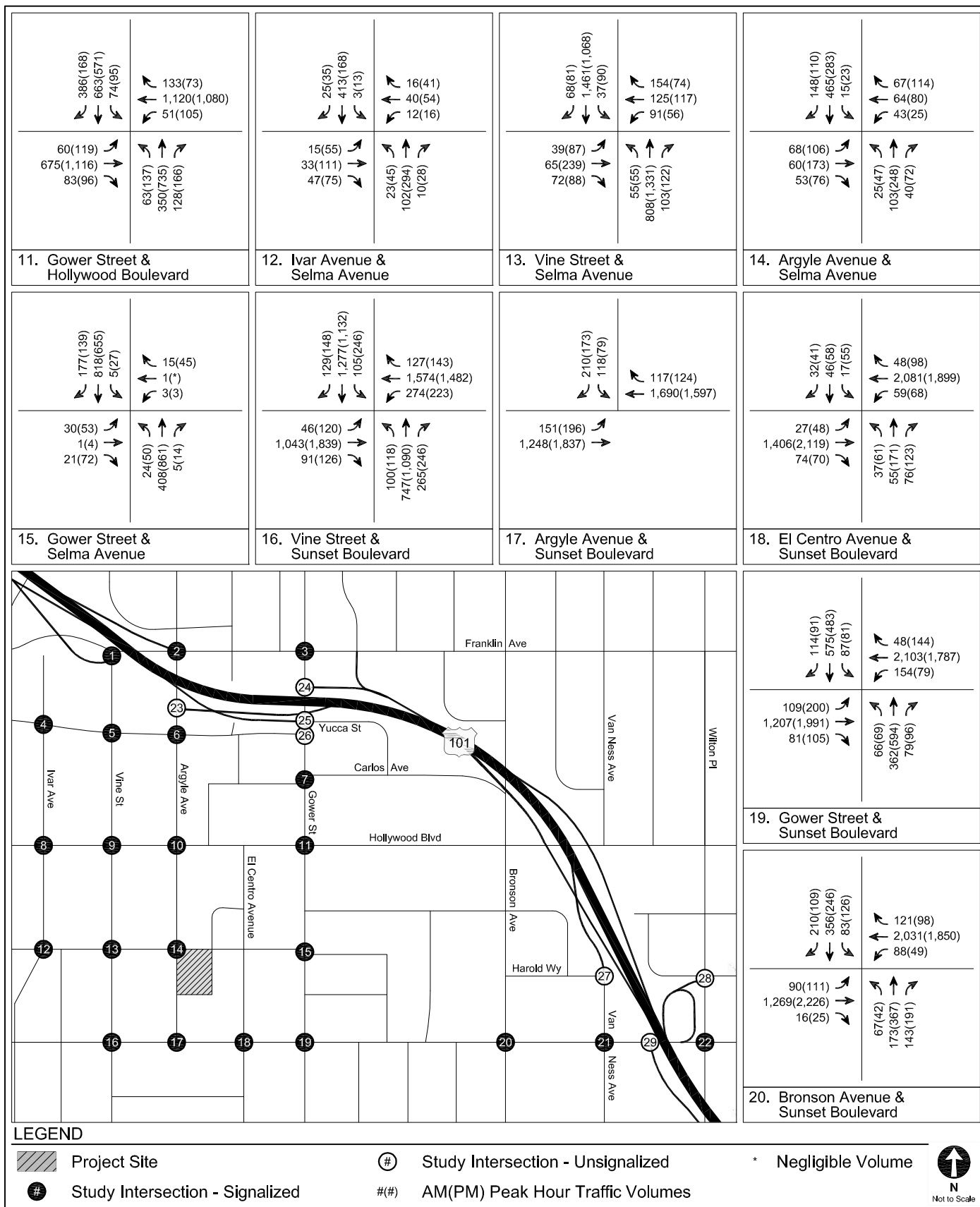
EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
13 (CONT.)



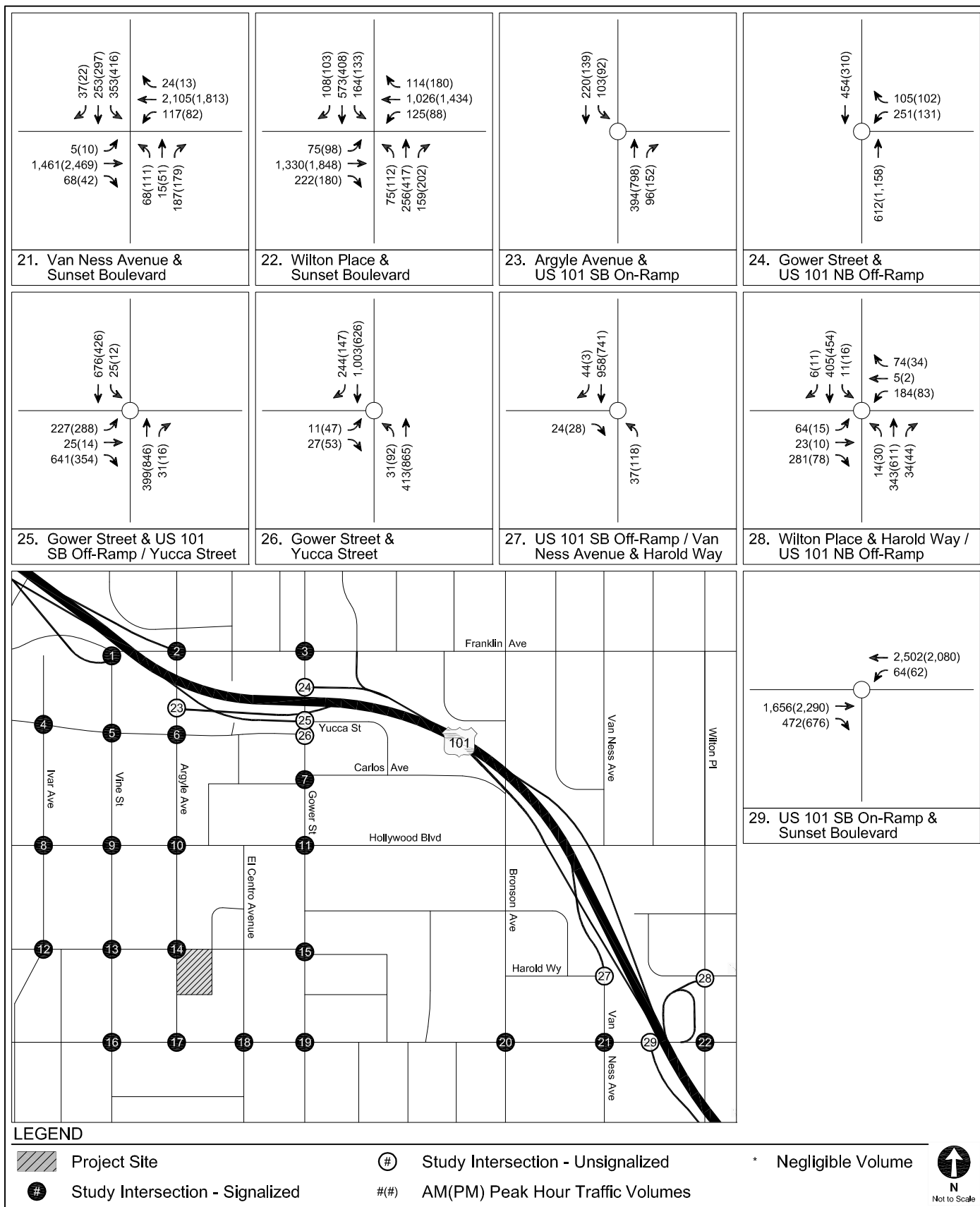
FUTURE WITH PROJECT CONDITIONS (YEAR 2023) - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
14



FUTURE WITH PROJECT CONDITIONS (YEAR 2023) - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
14 (CONT.)



FUTURE WITH PROJECT CONDITIONS (YEAR 2023) - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
14 (CONT.)

TABLE 14
TRIP GENERATION - SUPERMARKET OPTION

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
Supermarket	850	per ksf	102.24	62%	38%	3.40	51%	49%	9.48
Proposed Project									
Apartment Less 15% Transit/Walk-In Adjustment [b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Supermarket Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 40% Pass-by Reduction [d]	850	27 ksf	2,760 (552) (331) (751)	57 (11) (7) (16)	35 (7) (4) (10)	92 (18) (11) (26)	131 (26) (16) (36)	125 (25) (15) (34)	256 (51) (31) (70)
Subtotal - Supermarket			1,126	23	14	37	53	51	104
Total - Proposed Project			2,686	47	110	157	147	102	249
Existing Uses to be Removed									
Warehouse Less 15% Transit/Walk-In Adjustment [b]	150	32.634 ksf	116 (17)	8 (1)	2 0	10 (1)	3 0	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office Less 15% Transit/Walk-In Adjustment [b]	710	15.182 ksf	167 (25)	21 (3)	3 0	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial Less 15% Transit/Walk-In Adjustment [b] Less 10% Pass-by Reduction [d]	826 [e]	14 ksf	620 (93) (53)	8 (1) (1)	5 (1) 0	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			474	6	4	10	13	16	29
Total - Existing Uses to be Removed			715	31	9	40	19	38	57
Net New Project Trips			1,971	16	101	117	128	64	192

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.

TABLE 15
EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Existing Conditions		Existing with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.318 0.373	A A	0.320 0.375	A A	0.002 0.002	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.739 0.747	C C	0.747 0.752	C C	0.008 0.005	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.653 0.732	B C	0.657 0.736	B C	0.004 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.213 0.267	A A	0.213 0.267	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.489 0.456	A A	0.489 0.462	A A	0.000 0.006	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.187 0.316	A A	0.187 0.320	A A	0.000 0.004	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.332 0.259	A A	0.332 0.259	A A	0.000 0.000	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.526 0.495	A A	0.528 0.498	A A	0.002 0.003	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.736 0.679	D * D *	0.739 0.688	D * D *	0.003 0.009	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.491 0.481	A A	0.495 0.489	A A	0.004 0.008	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.682 0.629	B B	0.683 0.639	B B	0.001 0.010	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.249 0.280	A A	0.251 0.297	A A	0.002 0.017	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.561 0.544	A A	0.574 0.575	A A	0.013 0.031	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.405 0.344	A A	0.449 0.371	A A	0.044 0.027	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.563 0.540	A A	0.570 0.552	A A	0.007 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.784 0.861	D * D *	0.784 0.865	D * D *	0.000 0.004	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.385 0.319	A A	0.393 0.333	A A	0.008 0.014	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.396 0.544	A A	0.404 0.554	A A	0.008 0.010	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	0.742 0.758	C C	0.745 0.762	C C	0.003 0.004	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.668 0.693	B B	0.669 0.697	B B	0.001 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.610 0.737	B C	0.611 0.741	B C	0.001 0.004	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.525 0.582	A A	0.527 0.584	A A	0.002 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

TABLE 16
FUTURE WITH PROJECT CONDITIONS (YEAR 2023) - SUPERMARKET OPTION
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.369 0.445	A A	0.371 0.446	A A	0.002 0.001	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.888 0.943	D E	0.896 0.947	D E	0.008 0.004	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.713 0.804	C D	0.716 0.808	C D	0.003 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.262 0.325	A A	0.262 0.325	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.603 0.597	B A	0.604 0.603	B B	0.001 0.006	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.279 0.453	A A	0.280 0.457	A A	0.001 0.004	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.375 0.306	A A	0.376 0.307	A A	0.001 0.001	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.629 0.621	B B	0.631 0.623	B B	0.002 0.002	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.904 0.897	F * F *	0.906 0.906	F * F *	0.002 0.009	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.630 0.695	B B	0.634 0.703	B C	0.004 0.008	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.843 0.843	D D	0.845 0.852	D D	0.002 0.009	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.279 0.307	A A	0.281 0.325	A A	0.002 0.018	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.645 0.628	B B	0.659 0.659	B B	0.014 0.031	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.443 0.383	A A	0.487 0.410	A A	0.044 0.027	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.685 0.631	B B	0.693 0.643	B B	0.008 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.957 1.109	F * F *	0.958 1.114	F * F *	0.001 0.005	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.485 0.449	A A	0.493 0.466	A A	0.008 0.017	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.507 0.695	A B	0.515 0.705	A C	0.008 0.010	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	1.007 1.028	F F	1.010 1.033	F F	0.003 0.005	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.860 0.885	D D	0.861 0.889	D D	0.001 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.746 0.940	C E	0.747 0.943	C E	0.001 0.003	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.605 0.737	B C	0.606 0.739	B C	0.001 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

TABLE 17
EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION
UNSIGNALIZED INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Existing		Existing with Project	
			Delay	LOS	Delay	LOS
23.	Argyle Avenue & US 101 Southbound On-Ramp	AM PM	8.2 9.7	A A	8.2 9.7	A A
24.	Gower Street & US 101 Northbound Off-Ramp	AM PM	27.7 31.2	D D	28.2 32.5	D D
25.	Gower Street & US 101 Southbound Off-Ramp/Yucca Street	AM PM	76.1 65.4	F F	78.0 70.1	F F
26.	Gower Street & Yucca Street	AM PM	28.3 31.5	D D	28.5 32.2	D D
27.	US 101 Southbound Off-Ramp/Van Ness Avenue & Harold Way	AM PM	13.1 10.3	B B	13.1 10.3	B B
28.	Wilton Place & Harold Way/US 101 Northbound Off-Ramp	AM PM	13.0 7.6	B A	13.0 7.6	B A
29.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	32.0 74.4	D F	33.3 76.7	D F

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 4 (HCM methodology).

TABLE 18
FUTURE WITH PROJECT CONDITIONS (YEAR 2023) - SUPERMARKET OPTION
UNSIGNALIZED INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Future without Project		Future with Project	
			Delay	LOS	Delay	LOS
23.	Argyle Avenue & US 101 Southbound On-Ramp	AM PM	8.7 10.7	A B	8.7 10.7	A B
24.	Gower Street & US 101 Northbound Off-Ramp	AM PM	52.7 92.9	F F	54.5 102.0	F F
25.	Gower Street & US 101 Southbound Off-Ramp/Yucca Street	AM PM	162.6 196.4	F F	166.4 207.8	F F
26.	Gower Street & Yucca Street	AM PM	36.7 50.5	E F	36.9 52.1	E F
27.	US 101 Southbound Off-Ramp/Van Ness Avenue & Harold Way	AM PM	14.5 11.0	B B	14.5 11.0	B B
28.	Wilton Place & Harold Way/US 101 Northbound Off-Ramp	AM PM	14.3 7.8	B A	14.3 7.8	B A
29.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	73.9 OVRFLW	F F	78.7 OVRFLW	F F

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 4 (HCM methodology).

TABLE 19
SIGNAL WARRANT ANALYSIS - SUPERMARKET OPTION

No.	Intersection	Peak Hour	Peak Hour Warrant Met			
			Existing Conditions	Existing with Project Conditions	Future without Project Conditions	Future with Project Conditions
24.	Gower Street & US 101 Northbound Off-Ramp	AM PM	NO	NO	NO	NO
25.	Gower Street & US 101 Southbound Off-Ramp/Yucca Street	AM PM	YES	YES	YES	YES
26.	Gower Street & Yucca Street	AM PM	NO	NO	NO	NO
29.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	NO	NO	NO	NO

Chapter 9

Congestion Management Program Analysis

This chapter presents an analysis of the regional transportation facilities in the vicinity of the Project Site, in accordance with the procedures outlined in the CMP.

TIA GUIDELINES

The CMP requires that TIAs be performed on three types of facilities:

- Arterial Intersections
- Mainline Freeway Segments
- The Public Transit System

The CMP identifies specific arterial and freeway mainline locations for analysis.

Arterial Monitoring Intersection TIA Guidelines

The CMP requires that a TIA be performed for all CMP arterial monitoring intersections where a project would add 50 or more trips during either the weekday morning or afternoon peak hours. A detailed analysis is not required if the project adds fewer than 50 trips to an arterial monitoring intersection. The CMP analysis uses the same CMA methodology as used in earlier chapters of this Transportation Impact Study for City intersections to determine intersection V/C ratio and LOS. A significant impact requiring mitigation occurs if project traffic causes an incremental increase in intersection V/C ratio of 0.02 or greater to a facility projected to operate at LOS F ($V/C > 1.00$) after the addition of project traffic.

Mainline Freeway Monitoring Location TIA Guidelines

The CMP requires that a TIA be performed for all CMP mainline freeway monitoring locations where a project would add 150 or more trips (in either direction) during the weekday morning or afternoon peak hours. A detailed analysis is not required if the project adds fewer than 150 trips to a mainline freeway monitoring location (in either direction) during either the weekday morning or afternoon peak hours. The CMP analysis uses a demand-to-capacity (D/C) ratio to determine facility LOS based on capacity identified in Appendix A of the CMP. Similar to arterial monitoring intersections, a significant impact requiring mitigation occurs if project traffic causes an incremental increase in freeway segment D/C ratio of 0.02 or greater to a facility projected to operate at LOS F ($D/C > 1.00$) after the addition of project traffic.

Transit Impact Review Guidelines

The CMP requires that a transit system analysis be performed to determine whether a project would increase transit ridership beyond the current capacity of the transit system.

ARTERIAL MONITORING STATION ANALYSIS

The CMP identifies the following two arterial monitoring intersections within 1.5 miles of the Project Site:

- Santa Monica Boulevard & Western Avenue (1.1 miles southeast of the Project Site)
- Santa Monica Boulevard & Highland Avenue (1.0 mile southwest of the Project Site)

Both of these arterial monitoring intersections are outside of the boundaries of the Study Area. The Project trips at these locations were calculated based on the number of trips entering and leaving the Study Area (based on Figure 9) in the direction of the outlying CMP arterial monitoring intersections, conservatively assuming there would be no diverging trips.

Based on this methodology, the number of peak hour Project trips expected at each arterial monitoring intersection is as follows:

Intersection	Peak Hour Trips		Requires CMP Analysis?
	AM	PM	
Santa Monica Boulevard & Western Avenue	0	0	No
Santa Monica Boulevard & Highland Avenue	3	2	No

The Project would not add more than 50 peak hour trips at any of the arterial monitoring intersections. Therefore, further analysis of the CMP arterial monitoring intersections is not required.

If the Supermarket Option were pursued, the number of peak hour Project trips expected at each arterial monitoring intersection is as follows:

Intersection	Peak Hour Trips		Requires CMP Analysis?
	AM	PM	
Santa Monica Boulevard & Western Avenue	1	6	No
Santa Monica Boulevard & Highland Avenue	0	2	No

Consistent with the Project, the Supermarket Option would not add more than 50 peak hour trips at any of the arterial monitoring intersections. Therefore, further analysis of the CMP arterial monitoring intersections is not required.

FREEWAY SEGMENT ANALYSIS

The CMP identifies one mainline freeway monitoring location on US 101 south of Santa Monica Boulevard, approximately 1.4 miles southeast of the Project Site. At this location, the Project is projected to add a total of six northbound trips and 27 southbound trips during the morning peak hour and a total of 21 northbound trips and 13 southbound trips during the afternoon peak hour. Thus, the Project would not add 150 trips in either direction during either peak hour to the CMP

mainline freeway monitoring location, and further CMP freeway segment analysis is not required.

If pursued, the Supermarket Option would add a total of five northbound trips and 25 southbound trips during the morning peak hour and a total of 27 northbound trips and 14 southbound trips during the afternoon peak hour. Thus, the Supermarket Option would not add 150 trips or more in either direction during either peak hour and no further CMP freeway segment analysis is required.

REGIONAL TRANSIT IMPACT ANALYSIS

Section B.8.4 of the CMP provides a methodology for estimating the number of transit trips expected to result from a proposed project based on the number of vehicle trips. This methodology assumes an average vehicle occupancy (AVO) factor of 1.4 in order to estimate the number of person trips to and from the Project. Based on the assumptions in the trip generation estimates shown in Table 8, a transit/walk-in adjustment of up to 15% was applied to account for the use of non-automobile travel modes (e.g., rail, light-rail, bus, bicycle, walk, etc.). For the purposes of this analysis, all the transit/walk-in trip estimates from Table 8 were conservatively assumed to travel via public transit.

As shown in Table 8, prior to any transit/walk-in trip adjustments, the Project is anticipated to generate approximately 202 morning peak hour trips and 212 afternoon peak hour trips. Assuming an AVO of 1.4, the Project's vehicle trips result in an estimated increase of 283 person trips during the morning peak hour and 297 person trips during the afternoon peak hour. Using the 15% mode split, the Project would generate approximately 42 net new transit trips in the morning peak hour and 45 net new transit trips in the afternoon peak hour.

If pursued, as shown in Table 14, the Supermarket Option is anticipated to generate approximately 141 morning peak hour trips and 227 afternoon peak hour trips. Assuming an AVO of 1.4, the Supermarket Option's vehicle trips would result in an estimated increase of 197 person trips during the morning peak hour and 318 person trips during the afternoon peak hour. Assuming the 15% mode split, the Supermarket Option would generate approximately 30 net

new transit trips during the morning peak hour and 48 net new transit trips during the afternoon peak hour.

As detailed in Chapter 2, the Study Area is served by numerous established transit routes. As shown in Table 4, the total capacity of the analyzed transit lines within the Study Area during the morning and afternoon peak hours is approximately 6,993 and 5,851 trips, respectively. The Project's morning and afternoon peak hour person trips by transit are projected at 42 and 45 trips, respectively, and the Supermarket Option's morning and afternoon peak hour person trips by transit are projected at 30 and 48 trips, respectively, or less than 1% of the available average capacity during morning and afternoon peak hours.

As detailed in Table 4, the Project Site is served by numerous bus lines, as well as the Metro Red Line. Although the Project (and other Related Projects) will cumulatively add transit ridership, the Project Site, Hollywood, and the Study Area are served by a vast amount of transit service. Overall, the total transit capacity along those routes can accommodate the Project's transit trips during both the morning and afternoon peak hours. Therefore, the Project is not anticipated to result in material regional transit impacts.

Furthermore, Los Angeles County voters approved Measure R, a half-cent sales tax increase for transportation, which has allowed Metro to develop projects to improve the existing transportation system. *2009 Long Range Transportation Plan* (Metro, Adopted 2009) (the "2009 LRTP"), which outlined a range of transit and highway projects throughout Los Angeles County that were aimed to improve mobility and address future growth, is currently in the process of an update to address transportation issues and projects identified by local jurisdictions, Councils of Governments, and transportation agencies. *2014 Short Range Transportation Plan* (Metro, Adopted 2014) identifies projects and programs that will be implemented in accordance with the project priorities and funding schedules of the 2009 LRTP. It is recognized that with these plans in place, Metro will continue to maintain and expand regional transit service in order to accommodate cumulative demand in the region. Although the Project (and other related projects) will cumulatively add transit ridership, Metro will continue to maintain and expand regional transit service to accommodate cumulative demand in the region; therefore, cumulative impacts on public transit are considered to be less than significant.

Chapter 10

Site Access and Internal Circulation

This chapter summarizes the site access and internal circulation of the Project Site.

PROJECT SITE ACCESS AND CIRCULATION

Vehicles

Parking for the Project would be provided on-site within a multi-level parking garage consisting of four subterranean levels within the Project Site. Vehicular access to the parking garage would be provided via one full access driveway (accommodating right and left-turn ingress and egress movements) along Selma Avenue. The driveway would be designed in accordance with LADOT standards. Truck loading access would also be provided via a separate driveway along Selma Avenue. Should the Project move forward with the Supermarket Option, additional truck loading access would be provided via a driveway along Argyle Avenue. A dock manager and/or flag person would be employed to assist delivery truck access to the loading areas.

Pedestrians and Bicycles

The ground floor level of the Project would be designed to maximize the pedestrian experience, with pedestrian entrances at the Selma Avenue and Argyle Avenue street frontages. The sidewalks along Argyle Avenue and Selma Avenue would be maintained to provide safe pedestrian facilities.

Visitors, patrons and employees arriving by bicycle would have access on Selma Avenue. In order to facilitate bicycle use, bicycle parking spaces would be provided on-site, consistent with the Bicycle Parking Ordinance, Section 12.21 A16(a)(2), of the Los Angeles Municipal Code (LAMC).

Vehicular circulation would be designed to be clearly separated and would not conflict with pedestrian and bicycle circulation. The Project would not mix pedestrian and bicycle traffic with automobile traffic and, therefore, no impacts would occur.

Chapter 11

Parking

This chapter provides an analysis of the vehicular and bicycle parking requirements for the Project set forth in the LAMC in relation to the Project's proposed parking supply. As described in Chapter 1, the Project Site is located within a transit priority area, thus, per SB 743, the parking impacts of the Project are not considered significant and the parking analysis below is provided for informational purposes only.

PARKING SUPPLY

As proposed, a minimum of 358 automobile parking spaces would be provided within an on-site parking garage. Vehicular access to the Project Site would be provided via one full-access driveway on Selma Avenue. The Project would also provide a minimum of 182 bicycle parking spaces.

Should the Project move forward with the Supermarket Option, approximately 364 automobile parking spaces and a minimum of 186 bicycle parking spaces would be provided on-site.

PARKING CODE REQUIREMENTS

The LAMC details City parking requirements for new developments. The automobile parking requirements of the Project are based on the rates provided in LAMC Section 12.21.A4 for commercial uses within the Hollywood Community Redevelopment Area, as well as in LAMC Section 12.22.A25(d)(1) for housing development projects that qualify for a density bonus. The bicycle parking requirements of the Project are based on rates provided in LAMC Section 12.21.A16(a).

Automobile Parking Requirement

Table 20 summarizes the automobile parking requirements for the Project. Based on code requirements, the Project is required to provide a total of 358 automobile parking spaces, without taking potential bicycle parking reductions into account. Therefore, the LAMC parking requirement would be satisfied by the proposed on-site parking supply.

Also shown in Table 20, if, the Supermarket Option were pursued, 364 automobile parking spaces would be required. Thus, the LAMC parking requirement for the Supermarket Option would also be satisfied by the proposed on-site parking supply.

Bicycle Parking Requirement

Table 21 summarizes the bicycle parking requirements for the Project based on LAMC Section 12.21.A.16. There are distinct requirements for the number of long-term spaces and short-term spaces. Long-term spaces are for bicycle storage overnight or longer, while short-term spaces are more easily accessible as they are typically used for hours or less at a time. As detailed in Table 35, the Project is required to provide a total of 183 (27 short-term and 156 long-term) bicycle parking spaces, which would be satisfied within the on-site supply. Therefore, the Project would meet its bicycle parking requirement.

As shown in Table 21, if the Supermarket Option were pursued, a total of 187 bicycle parking spaces (29 short-term and 158 long-term) would be required. Therefore, the LAMC bicycle parking requirement for the Supermarket Option would be satisfied by the proposed on-site bicycle parking supply.

TABLE 20
CODE AUTOMOBILE PARKING REQUIREMENTS

Land Use	Parking Rate	Size	Total Spaces
<u>Project</u>			
Residential [a]			
2-3 bedroom	2.00 sp / 1 du	34 du	68
0-1 bedroom	1.00 sp / 1 du	242 du	242
Commercial (Retail/Restaurant) [b]	2.00 sp / 1,000 sf	24,000 sf	48
Total Code Parking Requirement - Project			358
<u>Supermarket Option</u>			
Residential [a]			
2-3 bedroom	2.00 sp / 1 du	34 du	68
0-1 bedroom	1.00 sp / 1 du	242 du	242
Commercial (Supermarket) [b]	2.00 sp / 1,000 sf	27,000 sf	54
Total Code Parking Requirement - Supermarket Option			364

Notes

[a] Parking rates per Option 1 of LAMC Section 12.22.A.25(d)(1) for residential buildings that qualify for density bonus.

[b] Per Section 12.21.A4(x)(3), commercial uses within the Hollywood Community Redevelopment Area are to provide parking at a rate of two spaces per 1,000 sf of gross floor area.

**TABLE 21
CODE BICYCLE PARKING REQUIREMENTS**

Land Use	Size	Bicycle Short-Term Parking Rate [a]	Total Short-Term Bicycle Spaces	Bicycle Long-Term Parking Rate [a]	Total Long-Term Bicycle Spaces
<u>Project</u>					
Residential	25 du	1.00 sp / 10 du	3	1.00 sp / 1 du	25
	75 du	1.00 sp / 15	5	1.00 sp / 1.5 du	50
	100 du	1.00 sp / 20	5	1.00 sp / 2 du	50
	76 du	1.00 sp / 40	2	1.00 sp / 4 du	19
Subtotal - Residential	276 du		15		144
Commercial/Restaurant	24,000 sf	1.00 sp / 2,000 sf	12	1.00 sp / 2,000 sf	12
Total Bicycle Parking Required - Project			27		156
<u>Supermarket Option</u>					
Residential	25 du	1.00 sp / 10 du	3	1.00 sp / 1 du	25
	75 du	1.00 sp / 15	5	1.00 sp / 1.5 du	50
	100 du	1.00 sp / 20	5	1.00 sp / 2 du	50
	76 du	1.00 sp / 40	2	1.00 sp / 4 du	19
Subtotal - Residential	276 du		15		144
Supermarket	27,000 sf	1.00 sp / 2,000 sf	14	1.00 sp / 2,000 sf	14
Total Bicycle Parking Required - Supermarket			29		158

Notes

[a] Bicycle requirements as calculated by Section 12.21.A.16(a) of Los Angeles Municipal Code (City of Los Angeles, revised March 1, 2018).

Chapter 12

Construction Impact Analysis

This chapter summarizes the construction schedule and construction impact analysis for the Project. The construction impact analysis relates to the temporary impacts that may result from the construction activities of the Project, which may include safety, operational, or capacity impacts, and was performed in accordance with *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles* (City of Los Angeles, 2006).

TYPES OF CONSTRUCTION IMPACTS

L.A. CEQA Thresholds Guide identifies four types of in-street construction impacts. Each of the four types of impacts refers to a particular population that could be inconvenienced by construction activities. The four types of impacts and related populations are:

1. Temporary traffic impacts – potential impacts on vehicular travelers on roadways
2. Temporary loss of access – potential impacts on visitors entering and leaving sites
3. Temporary loss of bus stops or rerouting of bus lines – potential impacts on bus travelers
4. Temporary loss of on-street parking – potential impacts on parkers

The factors used to determine the significance of a project's impacts involve the likelihood and extent to which an impact might occur, the potential inconvenience caused to a population, and consideration for public safety. Traffic impacts from construction activities could occur as a result of the following types of activities:

- Increases in truck traffic associated with export or import of fill materials and delivery of construction materials
- Increases in automobile traffic associated with construction workers traveling to and from the Project Site

-
- Reductions in existing street capacity or on-street parking from temporary lane closures necessary for the construction of roadway improvements, utility relocation, and drainage facilities
 - Blocking existing vehicle or pedestrian access to other parcels fronting streets

The impact of construction traffic (including haul trucks) would be a lessening of the capacities of access streets and haul routes due to slower movements and larger turning radii of trucks.

PROPOSED CONSTRUCTION SCHEDULE

The Project is anticipated to be constructed over a 30-month period, with completion anticipated in the year 2023. Typical construction activity would occur between 7:00 AM and 7:00 PM on weekdays, with occasional Saturday activity. However, haul truck activity will be restricted to the hours of 9:00 AM to 3:00 PM as is standard for development in Hollywood, and the vast majority of construction workers will arrive before the morning peak hour and depart before the afternoon peak hour as per typical construction day schedules. Peak haul truck activity occurs during excavation, and peak worker activity occurs during building construction. These two phases of construction were studied in greater detail.

EXCAVATION PHASE

The peak period of truck activity during construction would occur during excavation of the Project Site, which is anticipated to last approximately six months. Based on projections compiled for the Project, approximately 89,000 cubic yards (CY) of material would be excavated and removed from the Project Site. Approximately 125 trucks per day would travel to and from the Project Site (equivalent to 250 daily truck trips), during which time up to 20 workers would be on-site.

Excavation Phase Trip Generation

Because construction trucks (such as earth-hauling trucks and cement trucks) are larger and slower than the passenger vehicles that make up the majority of the vehicles on the roads, they have an effect on traffic that is greater than a passenger vehicle's effect. *Transportation Research Circular No. 212* defines passenger car equivalency (PCE) for a vehicle as the number of through moving passenger cars to which it is equivalent based on the vehicle's headway and delay-creating effects. Table 8 of *Transportation Research Circular No. 212* and Exhibit 16.7 of the HCM suggest a PCE of 2.0 for trucks. Assuming a PCE factor of 2.0, the 250 daily truck trips would be equivalent to 500 daily PCE trips. Assuming these trips arrive and depart regularly over six hours between 9:00 AM and 3:00 PM on a typical workday, this is approximately 42 arriving PCE trips and 42 departing PCE trips each hour, outside the commuter peak hours.

For workers, an AVO of 1.135 persons per vehicle was applied to account for carpooling, as provided in *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993). Therefore, 20 workers would result in a total of 18 vehicles that would arrive and depart from the Project Site each day. The hours of construction are expected to be from 7:00 AM to 7:00 PM. However, the vast majority of workers would arrive on-site prior to the weekday morning commuter peak hour and leave prior to or after the afternoon commuter peak hour. Only a fraction of the maximum daily construction worker trips (approximately 10%, or two vehicles) may depart the Project Site during the afternoon peak hour, which is not anticipated to result in any significant traffic impacts.

Haul Route

Haul trucks would travel on approved truck routes designated within the City. Given the Project Site's proximity to US 101, haul truck traffic would generally take the most direct route to the appropriate freeway ramp. Therefore, haul traffic is assumed to proceed to the site via US 101 southbound to Gower Street and return to US 101 northbound via Argyle Avenue.

Temporary Impact Analysis

As summarized above, haul truck trips and a vast majority of construction worker trips would not occur during the peak hours. Therefore, no peak hour construction traffic impacts are expected during the excavation and grading phase of construction.

BUILDING CONSTRUCTION PHASE

The traffic impacts associated with construction workers depends on the number of construction workers employed during various phases of construction, as well as the travel mode and travel time of the workers. According to construction projections prepared for the Project, a maximum of approximately 150 workers could be on the construction site at one time during building. In general, the hours of construction typically require workers to be on-site before the weekday commuter morning peak period and allow them to leave before the commuter afternoon peak period (i.e., arrive at the site prior to 7:00 AM and depart before 3:00 PM). Therefore, most, if not all, construction worker trips would occur outside of the typical weekday commuter peak periods. It is anticipated that only a fraction of the maximum daily construction worker trips (approximately 10%, or two vehicles) may depart the Project Site during the afternoon peak hour, which is not anticipated to result in any significant traffic impacts.

Building Phase Trip Generation

After application of an AVO of 1.135 persons per vehicle, 150 workers would result in a total of 132 vehicles that would arrive and depart from the Project Site each day during the building construction phase. As described above, the vast majority would typically arrive prior to the morning peak hour and leave prior to the afternoon peak hour. Truck deliveries would also be scheduled outside the peak hours to the extent feasible. As such, the construction phase is not expected to cause a significant traffic impact at any of the study intersections.

During construction, adequate parking for construction workers would be provided on-site or secured in local public parking facilities. Restrictions against construction workers parking in the

public right-of-way in the vicinity of (or adjacent to) the Project Site will be identified as part of the Construction Management Plan, described below.

CONSTRUCTION MANAGEMENT PLAN

A detailed Construction Management Plan, including street closure information, a detour plan, haul routes, and a staging plan would be prepared and submitted to LADOT for review and approval. The Construction Management Plan would formalize how construction would be carried out and identify specific actions that would be required to reduce effects on the surrounding community. The Construction Management Plan will include a Worksite Traffic Control Plan, which will facilitate traffic and pedestrian movement, and minimize the potential conflicts between construction activities, street traffic, bicyclists, and pedestrians.

The Construction Management Plan shall be based on the nature and timing of the specific construction activities and other projects in the vicinity of the Project Site, and shall include, but not be limited to, the following elements, as appropriate:

- Advance, bilingual notification of adjacent property owners and occupants of upcoming construction activities, including durations and daily hours of operation.
- Temporary pedestrian, bicycle, and vehicular traffic controls during all construction activities adjacent to Argyle Avenue and Selma Avenue, to ensure traffic safety on public rights of way. These controls shall include, but not be limited to, flag people trained in pedestrian and bicycle safety at the Project Site's driveways.
- Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways, per the work site traffic control plan (e.g., flag men).
- Scheduling of construction activities to reduce the effect on traffic flow on surrounding arterial streets.
- Potential sequencing of construction activity for the Project to reduce the amount of construction-related traffic on arterial streets.
- Containment of construction activity within the Project Site boundaries, per the work site traffic control plan.
- Prohibition on construction-related vehicles/equipment and construction worker parking on surrounding public streets.

-
- Coordination with Metro to address the relocation of the bus layover stop located at east of Argyle Avenue & Selma Avenue adjacent to the Project Site.
 - Safety precautions for pedestrians and bicyclists through such measures as alternate routing and protection barriers shall be implemented as appropriate.
 - Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible (after 9:00 AM or before 3:00 PM).
 - Installation of appropriate traffic signs around the Project Site to ensure pedestrian, bicycle, and vehicle safety.
 - No staging of hauling trucks on any streets adjacent to the Project, unless specifically approved as a condition of an approved haul route.
 - Spacing of trucks so as to discourage a convoy effect.
 - Installation of truck crossing signs within 300 feet of the exit of the Project Site in each direction.
 - Sufficient dampening of the construction area to control dust caused by grading and hauling and reasonable control at all times of dust caused by wind.
 - Securing of loads by trimming and watering or covering to prevent the spilling or blowing of the earth material.
 - Cleaning of trucks and loads at the export site to prevent blowing dirt and spilling of loose earth.
 - Maintenance of a log documenting the dates of hauling and the number of trips (i.e., trucks) per day available on the job site at all times.
 - Identification of a construction manager and provision of a telephone number for any inquiries or complaints from residents regarding construction activities. The telephone number shall be posted at the site readily visible to any interested party during site preparation, grading and construction.

POTENTIAL IMPACTS ON ACCESS, TRANSIT, AND PARKING

Most construction activities will be primarily contained within the Project Site boundaries. However, it is expected that construction fences will encroach into the public right-of-way (e.g., sidewalk and roadways) adjacent to the Project Site on Argyle Avenue and Selma Avenue. Construction activities are anticipated to result in the narrowing of the northbound lane on Argyle Avenue and the eastbound lane on Selma Avenue adjacent to the Project Site. Both

roadways would both continue to provide two travel lanes, one in each direction; however, on-street parking adjacent to the Project Site would be temporarily removed during construction activities. Travel lanes would be maintained in each direction throughout the construction period, and emergency access would not be impeded.

The use of the public right-of-way on Argyle Avenue and Selma Avenue would require temporary rerouting of pedestrian traffic as the sidewalks fronting the Project Site would be closed. The Construction Management Plan would include measures to ensure pedestrian safety along the affected sidewalks and temporary walkways (e.g., use of directional signage, maintaining continuous and unobstructed pedestrian paths, and/or providing overhead covering).

There is a Metro bus layover stop adjacent to the Project Site on Selma Avenue that may have to be temporarily relocated either east of the Project Site boundary or west of Argyle Avenue. Up to six metered parking spaces on Argyle Avenue adjacent to the Project Site would be temporarily removed to accommodate construction activities. These temporary relocations would be coordinated with Metro and LADOT and no impact on transit service or parking is anticipated.

Project construction is not expected to create hazards for roadway travelers, bus riders, or parkers, so long as commonly practiced safety procedures for construction are followed. Such procedures and other measures (e.g., to address temporary traffic control, lane closures, sidewalk closures, etc.) have been incorporated into the Construction Management Plan. The construction-related impacts associated with access and transit are anticipated to be less than significant, and the implementation of the Construction Management Plan would further reduce those impacts.

References

2009 Long Range Transportation Plan, Los Angeles County Metropolitan Transportation Authority, Adopted 2009.

2010 Bicycle Plan, A Component of the City of Los Angeles Transportation Element, Los Angeles Department of City Planning, 2010.

2010 Highway Capacity Manual, Transportation Research Board, 2010.

2010 Los Angeles County Congestion Management Program, Los Angeles County Metropolitan Transportation Authority, 2010.

2014 Short Range Transportation Plan, Los Angeles County Metropolitan Transportation Authority, Adopted 2014.

2015 Traffic Volumes on California State Highways, California Department of Transportation, 2016.

California Manual on Uniform Traffic Control Devices, California Department of Transportation, 2012.

Caltrans Strategic Management Plan 2015-2020, California Department of Transportation, March 2015.

California Transportation Plan 2040, California Department of Transportation, June 2016.

CEQA Air Quality Handbook, South Coast Air Quality Management District, 1993.

City of Los Angeles Transportation Element of the General Plan, Los Angeles Department of City Planning, 1999.

First Amendment to the Agreement between LADOT and Caltrans District 7 on Freeway Impact Analysis Procedures, State of California and City of Los Angeles, December 15, 2015.

Guide for the Preparation of Traffic Impact Studies, California Department of Transportation, December 2002.

Guidelines for Implementation of the California Environmental Quality Act, Chapter 3, Title 14, California Code of Regulations, California Natural Resources Agency, amended July 27, 2007.

Hollywood Community Plan, Los Angeles Department of City Planning, 1988.

L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles, City of Los Angeles, 2006.

References, cont.

Local Development – Intergovernmental Review Program Interim Guide, California Department of Transportation, Approved September 2016.

Los Angeles Municipal Code, City of Los Angeles, March 31, 2017.

Manual of Policies and Procedures, Los Angeles Department of Transportation, December 2008.

Mobility Plan 2035, An Element of the General, Los Angeles Department of City Planning, January 2016.

State of California Senate Bill No. 743, Steinberg, 2013.

Transportation Impact Study Guidelines, Los Angeles Department of Transportation, December 2016.

Transportation Research Circular No. 212, Interim Materials on Highway Capacity, Transportation Research Board, 1980.

Trip Generation, 9th Edition, Institute of Transportation Engineers, 2012.

Vision Zero: Eliminating Traffic Deaths in Los Angeles by 2025, City of Los Angeles, August 2015.

Appendix A

Memorandum of Understanding



Transportation Impact Study Memorandum of Understanding (MOU)

This MOU acknowledges that the Transportation Impact Study for the following Project will be prepared in accordance with the latest version of LADOT's Transportation Impact Study Guidelines:

I. PROJECT INFORMATION

Project Name: 1546 Argyle

Project Address: 1546 Argyle Avenue, Los Angeles, CA 90028

Project Description: The Project consists of a mixed-use development with up to 276 residential units and 24,000 square feet (sf) of ground floor commercial uses, which may include approximately 9,000 sf of retail uses and 15,000 sf of restaurant uses. The existing retail, office, and warehouse uses would be removed with the Project. An alternate Project option ("Supermarket Option") includes a 27,000 sf supermarket in place of the 24,000 sf of ground floor commercial uses.

LADOT Project Case Number: _____ Project Site Plan attached? (Required) ☒ Yes ☐ No

II. TRIP GENERATION

(Residential / Commercial)

Geographic Distribution: N 25 / 30 % S 40 / 30 % E 15 / 20 % W 20 / 20 %

Illustration of Project trip distribution percentages at Study intersections attached? (Required) ☒ Yes ☐ No

Trip Generation Adjustments (Exact amount of credit subject to approval by LADOT)

	Yes	No
Transit Usage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Transportation Demand Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Existing Active Land Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Previous Land Use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Internal Trip	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pass-By Trip	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Source of Trip Generation Rate(s)? ☒ ITE 9th Edition ☐ Other: _____

Trip generation table including a description of the proposed land uses, ITE rates, estimated morning and afternoon peak hour volumes (ins/outs/totals), proposed trip credits, etc. attached? (Required) ☒ Yes ☐ No
(Project / Supermarket Option)

	IN	OUT	TOTAL
AM Trips	<u>43 / 16</u>	<u>127 / 101</u>	<u>170 / 117</u>
PM Trips	<u>128 / 128</u>	<u>51 / 64</u>	<u>179 / 192</u>

III. STUDY AREA AND ASSUMPTIONS

Project Buildout Year: 2023 Ambient or CMP Growth Rate: 1 % Per Yr.

Related Projects List, researched by the consultant and approved by LADOT, attached? (Required) ☒ Yes ☐ No

Subject to Freeway Impact Analysis, in addition to CMP Analysis? (Freeway analysis screening filter must be included in this MOU; selecting "yes" implies that at least one criteria was satisfied) ☒ Yes ☐ No

Map of Study Intersections attached? (May be subject to LADOT revision after initial impact analysis) ☒ Yes ☐ No



Is this Project located on a street within the High Injury Network? ☐ Yes ☒ No

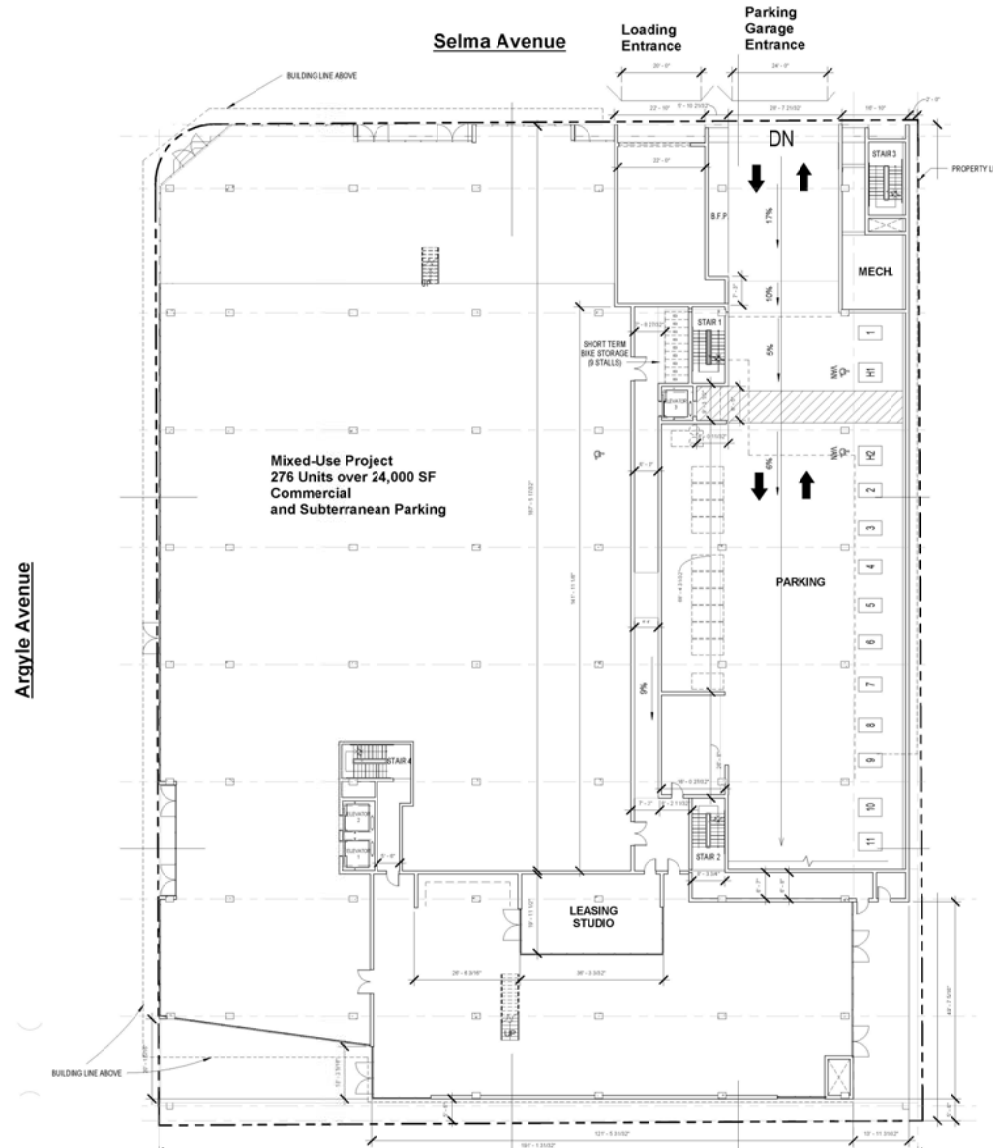
IV. CONTACT INFORMATIONCONSULTANT

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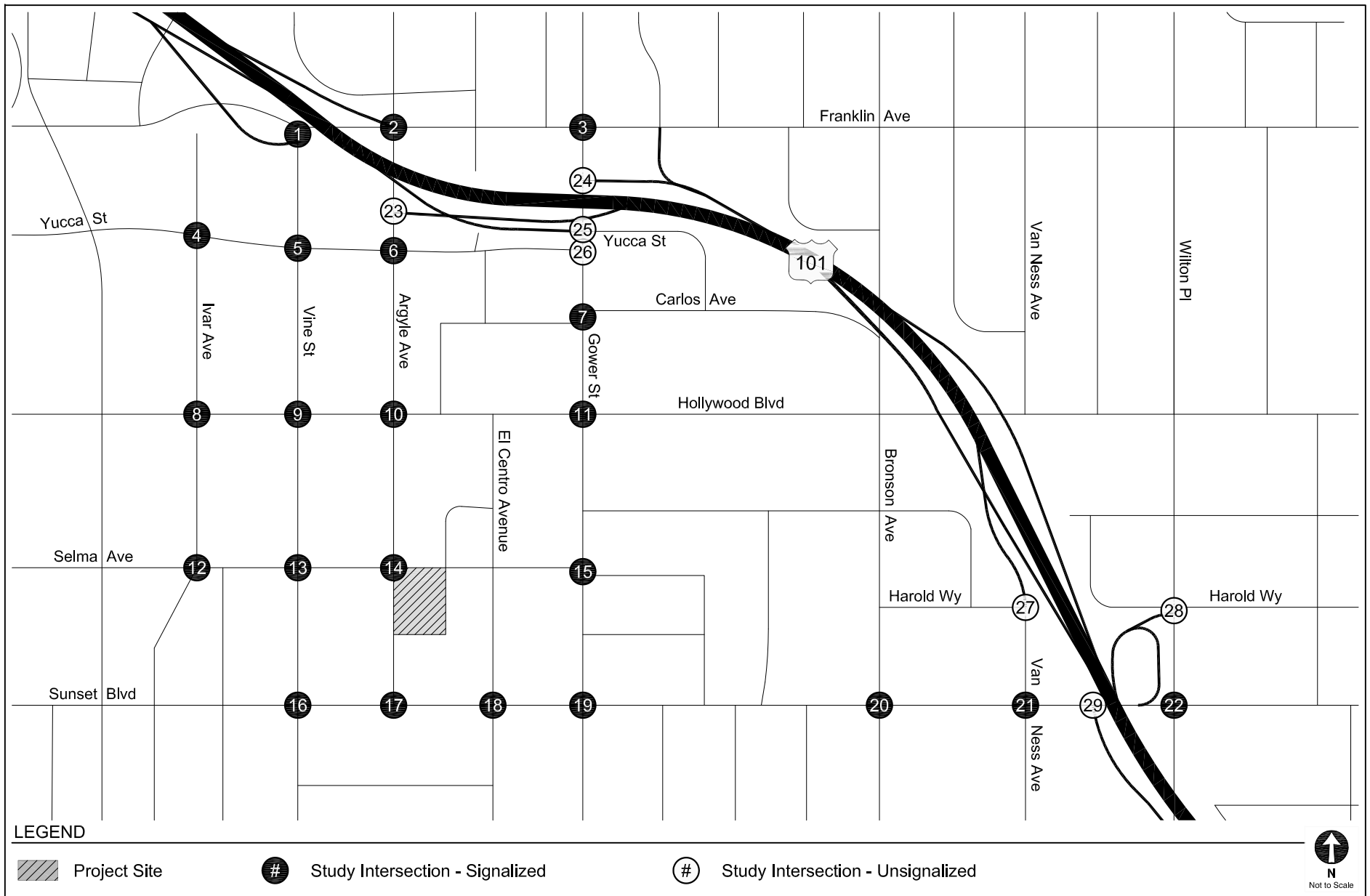
Approved by: x		<u>6/12/17</u>	x		<u>6/27/17</u>
	Consultant's Representative	Date		LADOT Representative	Date



Source: Carrier Johnson + Culture

SITE PLAN

FIGURE
1



STUDY AREA

FIGURE
2

**TABLE 1
STUDY INTERSECTIONS**

No	Intersection	Jurisdiction
<i>Signalized Intersections</i>		
1.	Vine Street & Franklin Avenue / US 101 Southbound Off-Ramp	City of Los Angeles / Caltrans
2.	Argyle Avenue / US 101 Northbound On-Ramp & Franklin Avenue	City of Los Angeles / Caltrans
3.	Gower Street & Franklin Avenue	City of Los Angeles
4.	Ivar Avenue & Yucca Street	City of Los Angeles
5.	Vine Street & Yucca Street	City of Los Angeles
6.	Argyle Avenue & Yucca Street	City of Los Angeles
7.	Gower Street & Carlos Avenue	City of Los Angeles
8.	Ivar Avenue & Hollywood Boulevard	City of Los Angeles
9.	Vine Street & Hollywood Boulevard	City of Los Angeles
10.	Argyle Avenue & Hollywood Boulevard	City of Los Angeles
11.	Gower Street & Hollywood Boulevard	City of Los Angeles
12.	Ivar Avenue & Selma Avenue	City of Los Angeles
13.	Vine Street & Selma Avenue	City of Los Angeles
14.	Argyle Avenue & Selma Avenue	City of Los Angeles
15.	Gower Street & Selma Avenue	City of Los Angeles
16.	Vine Street & Sunset Boulevard	City of Los Angeles
17.	Argyle Avenue & Sunset Boulevard	City of Los Angeles
18.	El Centro Avenue & Sunset Boulevard	City of Los Angeles
19.	Gower Street & Sunset Boulevard	City of Los Angeles
20.	Bronson Avenue & Sunset Boulevard	City of Los Angeles
21.	Van Ness Avenue & Sunset Boulevard	City of Los Angeles
22.	Wilton Place & Sunset Boulevard	City of Los Angeles
<i>Unsignalized Intersections</i>		
23.	Argyle Avenue & US 101 Southbound On-Ramp	City of Los Angeles / Caltrans
24.	Gower Street & US 101 Northbound Off-Ramp	City of Los Angeles / Caltrans
25.	Gower Street & US 101 Southbound Off-Ramp / Yucca Street	City of Los Angeles / Caltrans
26.	Gower Street & Yucca Street	City of Los Angeles
27.	US 101 Southbound Off-Ramp / Van Ness Avenue & Harold Way	City of Los Angeles / Caltrans
28.	Wilton Place & Harold Way / US 101 Northbound Off-Ramp	City of Los Angeles / Caltrans
29.	US 101 Southbound On-Ramp & Sunset Boulevard	City of Los Angeles / Caltrans

**TABLE 2-A
TRIP GENERATION**

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
High-Turnover Restaurant	932	per ksf	127.15	55%	45%	10.81	60%	40%	9.85
Proposed Project									
Apartment Less 15% Transit/Walk-In Adjustment [b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Retail Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 50% Pass-by Reduction [d]	820	9 ksf	384 (77) (46) (131)	6 (1) (1) (2)	3 (1) 0 (1)	9 (2) (1) (3)	16 (3) (2) (6)	17 (3) (2) (6)	33 (6) (4) (12)
Subtotal - Retail			130	2	1	3	5	6	11
Restaurant Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 20% Pass-by Reduction [d]	932	15 ksf	1,907 (381) (229) (259)	89 (18) (11) (12)	73 (15) (9) (10)	162 (33) (20) (22)	89 (18) (11) (12)	59 (12) (7) (8)	148 (30) (18) (20)
Subtotal - Restaurant			1,038	48	39	87	48	32	80
Total - Proposed Project			2,728	74	136	210	147	89	236
Existing Uses to be Removed									
Warehouse Less 15% Transit/Walk-In Adjustment [b]	150	32.634 ksf	116 (17)	8 (1)	2 0	10 (1)	3 0	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office Less 15% Transit/Walk-In Adjustment [b]	710	15.182 ksf	167 (25)	21 (3)	3 0	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial Less 15% Transit/Walk-In Adjustment [b] Less 10% Pass-by Reduction [d]	826 [e]	14 ksf	620 (90) (51)	8 (1) (1)	5 (1) 0	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			457	6	4	10	13	16	29
Total - Existing Uses to be Removed			698	31	9	40	19	38	57
Net New Project Trips			2,030	43	127	170	128	51	179

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.

**TABLE 2-B
TRIP GENERATION - SUPERMARKET OPTION**

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<u>Trip Generation Rates</u> [a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
Supermarket	850	per ksf	102.24	62%	38%	3.40	51%	49%	9.48
<u>Proposed Project</u>									
Apartment Less 15% Transit/Walk-In Adjustment [b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Supermarket Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 40% Pass-by Reduction [d]	850	27 ksf	2,760 (552) (331) (751)	57 (11) (7) (16)	35 (7) (4) (10)	92 (18) (11) (26)	131 (26) (16) (36)	125 (25) (15) (34)	256 (51) (31) (70)
Subtotal - Supermarket			1,126	23	14	37	53	51	104
Total - Proposed Project			2,686	47	110	157	147	102	249
<u>Existing Uses to be Removed</u>									
Warehouse Less 15% Transit/Walk-In Adjustment [b]	150	32.634 ksf	116 (17)	8 (1)	2 0	10 (1)	3 0	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office Less 15% Transit/Walk-In Adjustment [b]	710	15.182 ksf	167 (25)	21 (3)	3 0	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial Less 15% Transit/Walk-In Adjustment [b] Less 10% Pass-by Reduction [d]	826 [e]	14 ksf	620 (93) (53)	8 (1) (1)	5 (1) 0	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			474	6	4	10	13	16	29
Total - Existing Uses to be Removed			715	31	9	40	19	38	57
Net New Project Trips			1,971	16	101	117	128	64	192

du: dwelling unit

ksf: 1,000 square feet

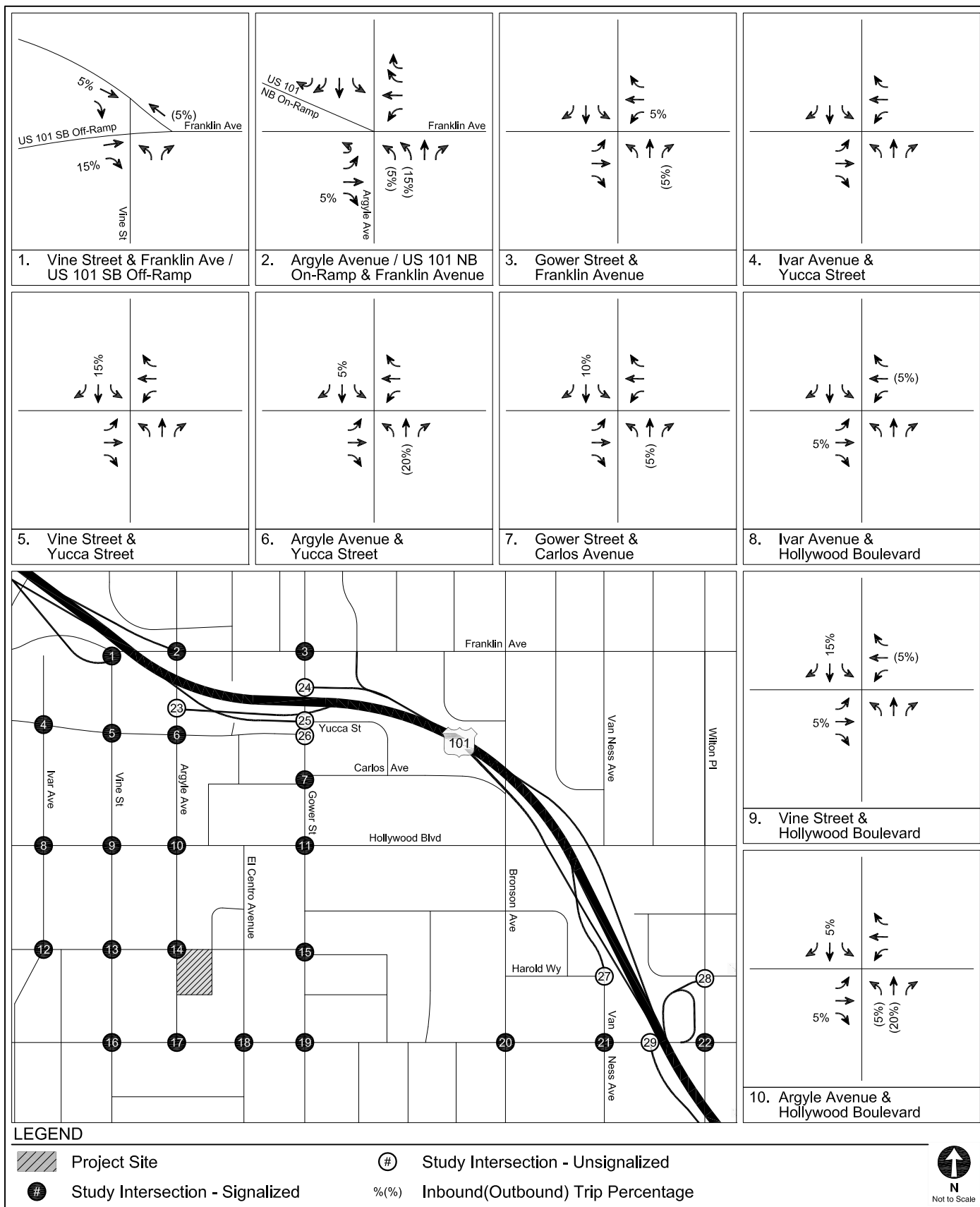
[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

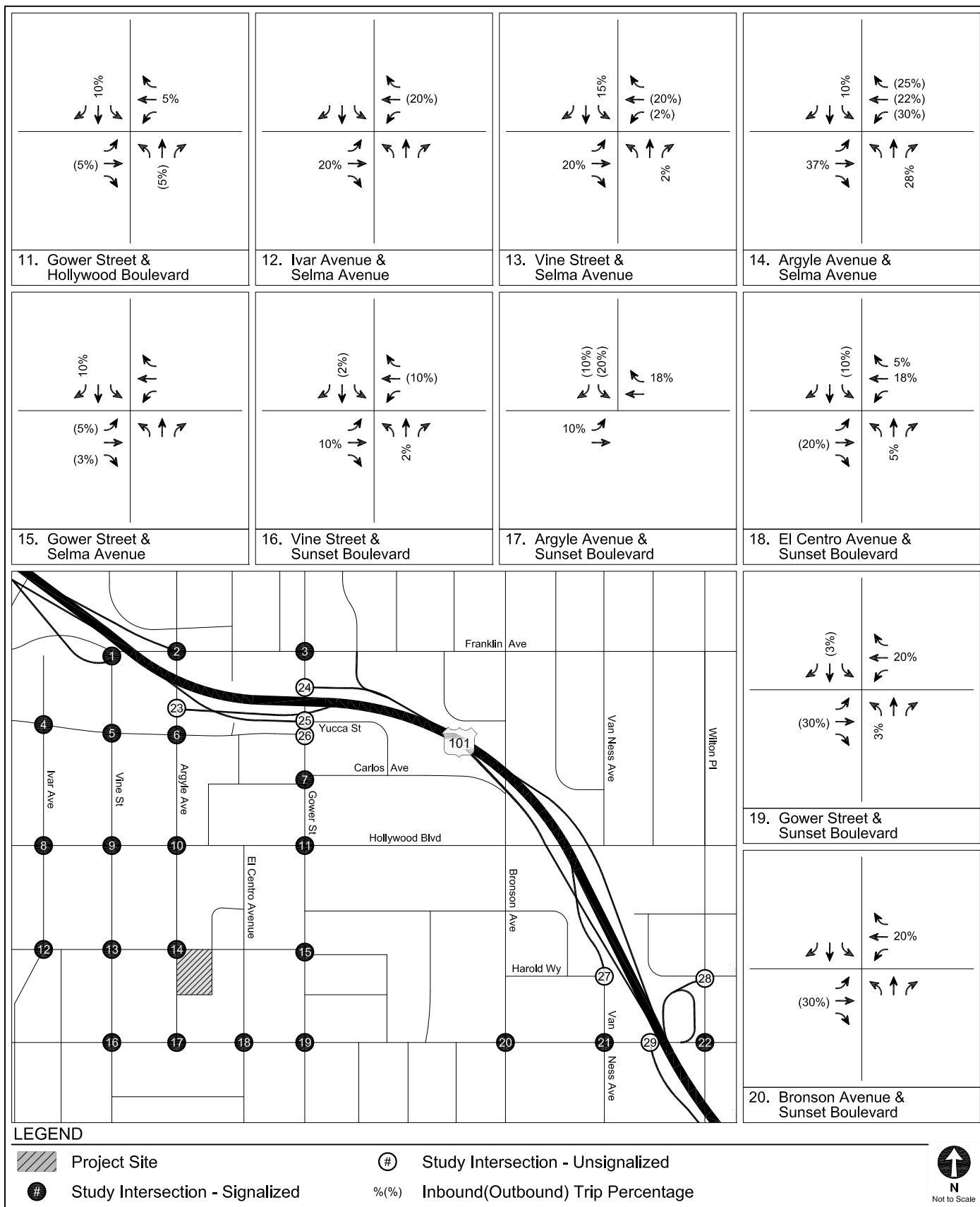
[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

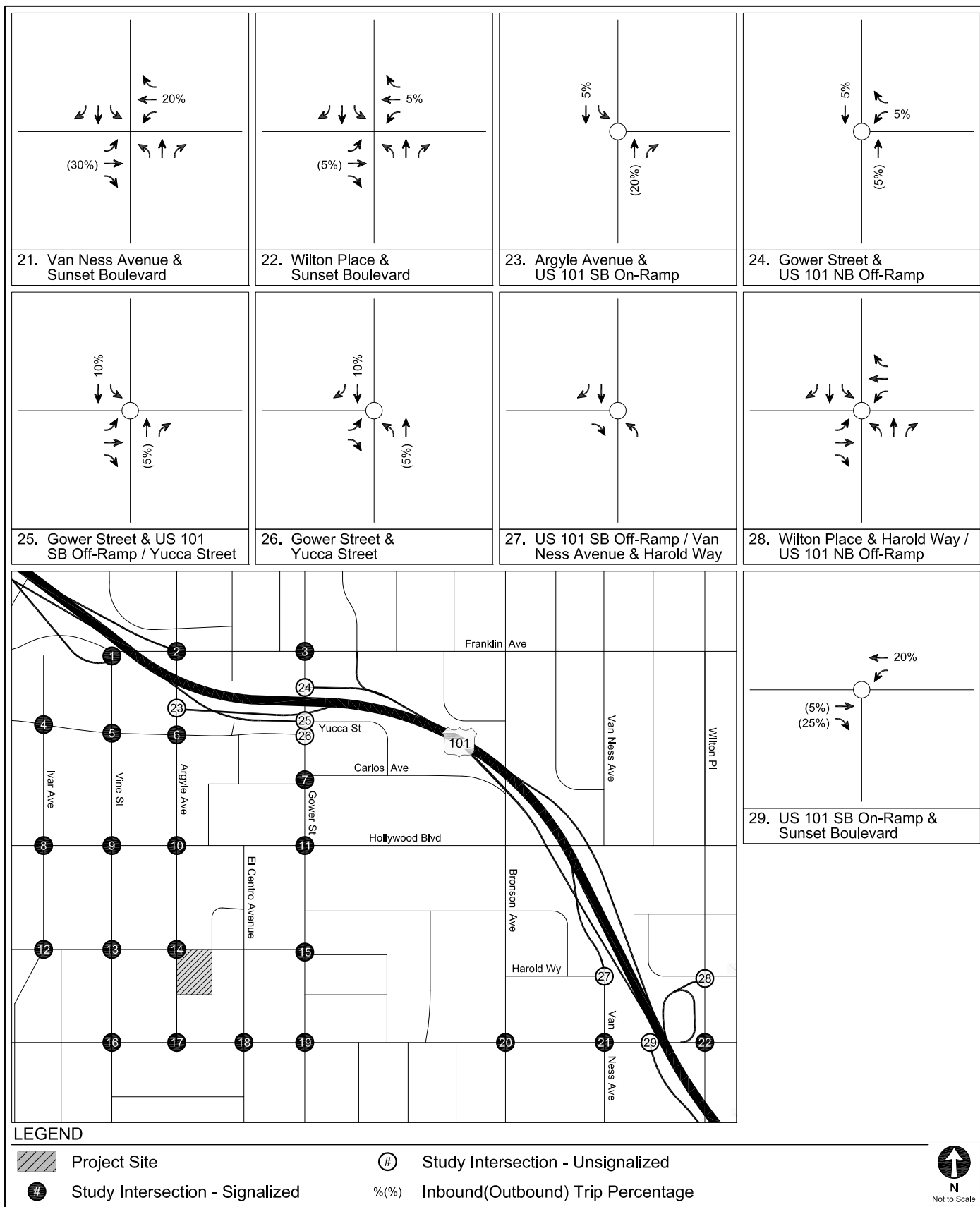
[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.





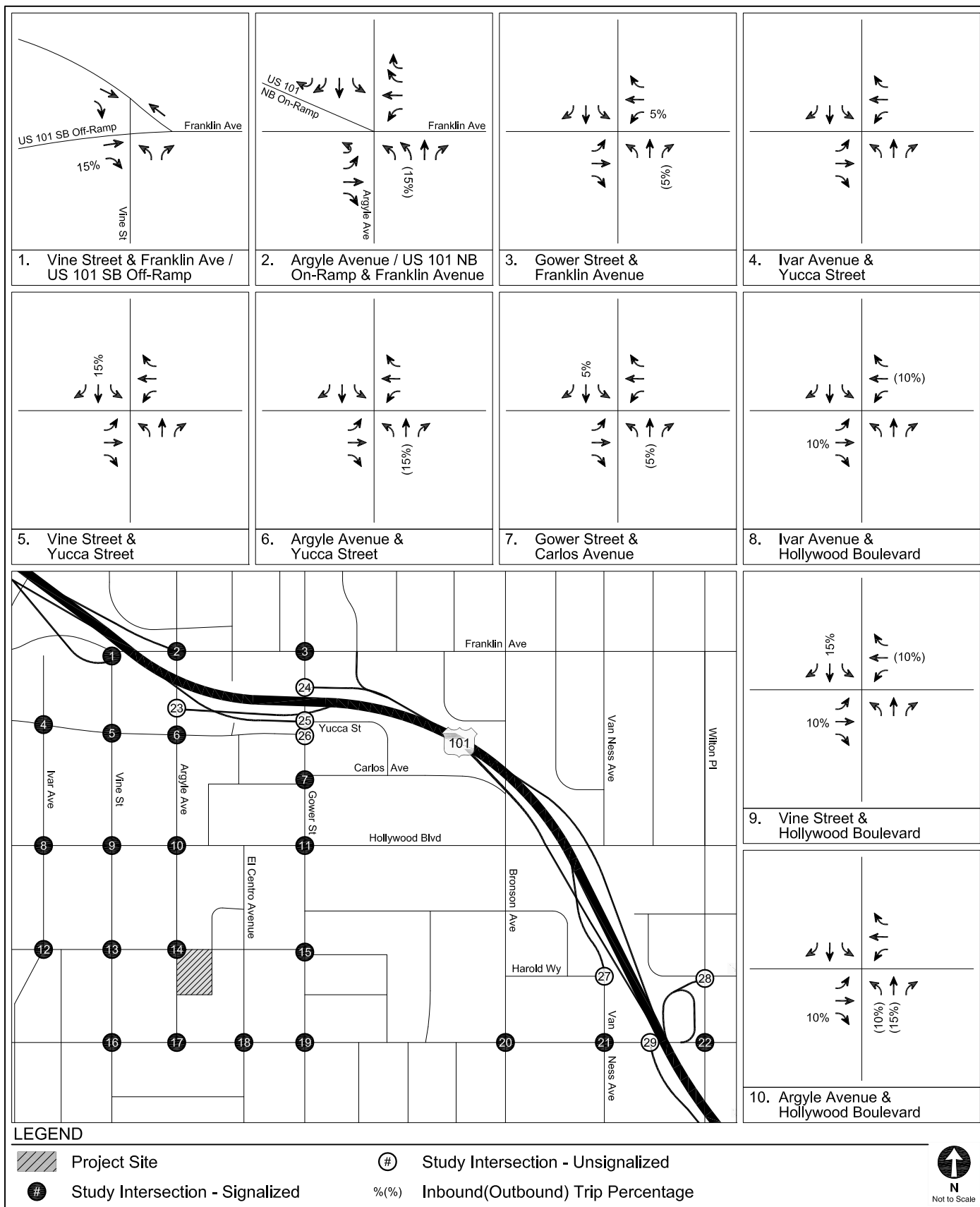
TRIP DISTRIBUTION
RESIDENTIAL

FIGURE
3A (CONT.)



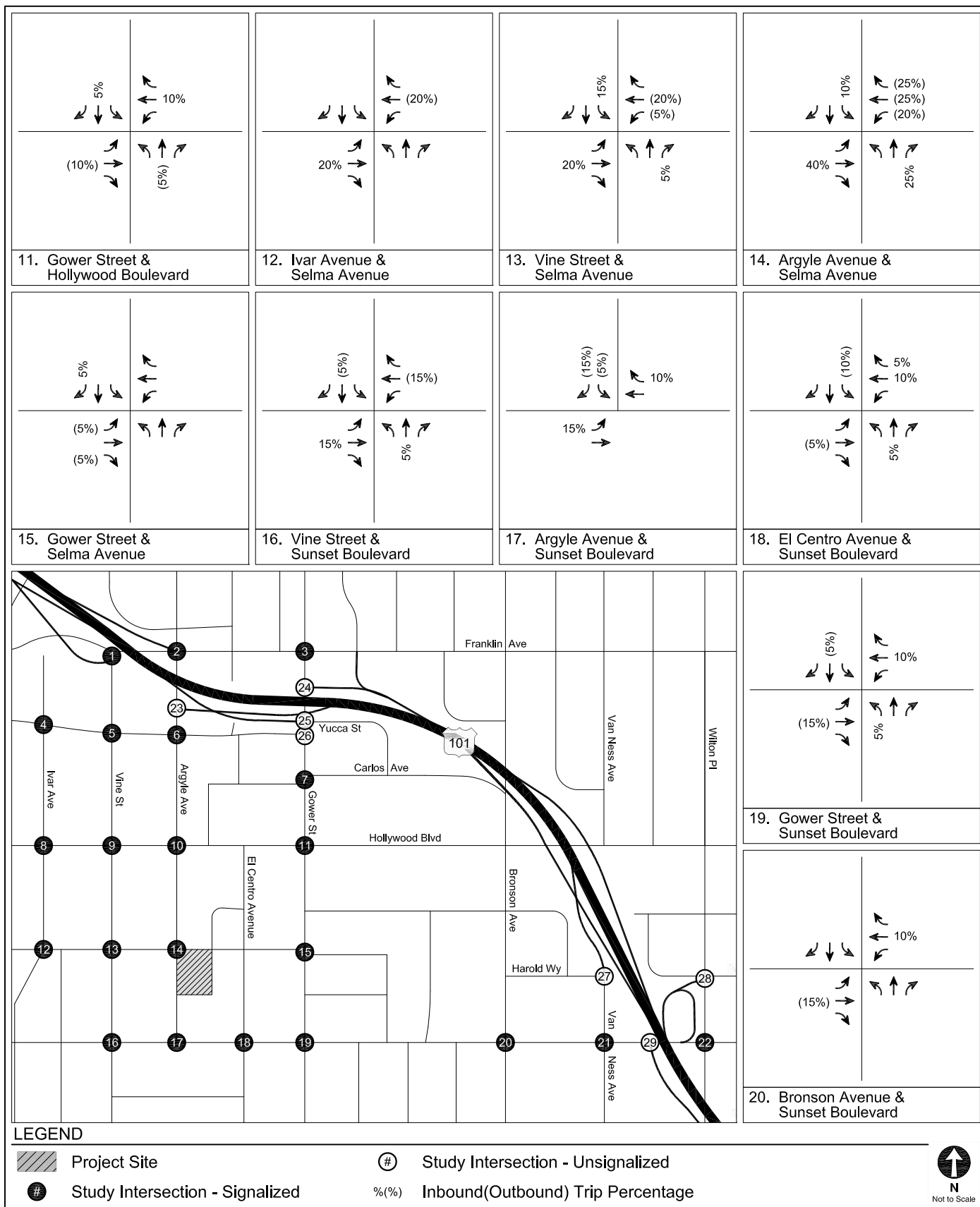
TRIP DISTRIBUTION
RESIDENTIAL

FIGURE
3A (CONT.)



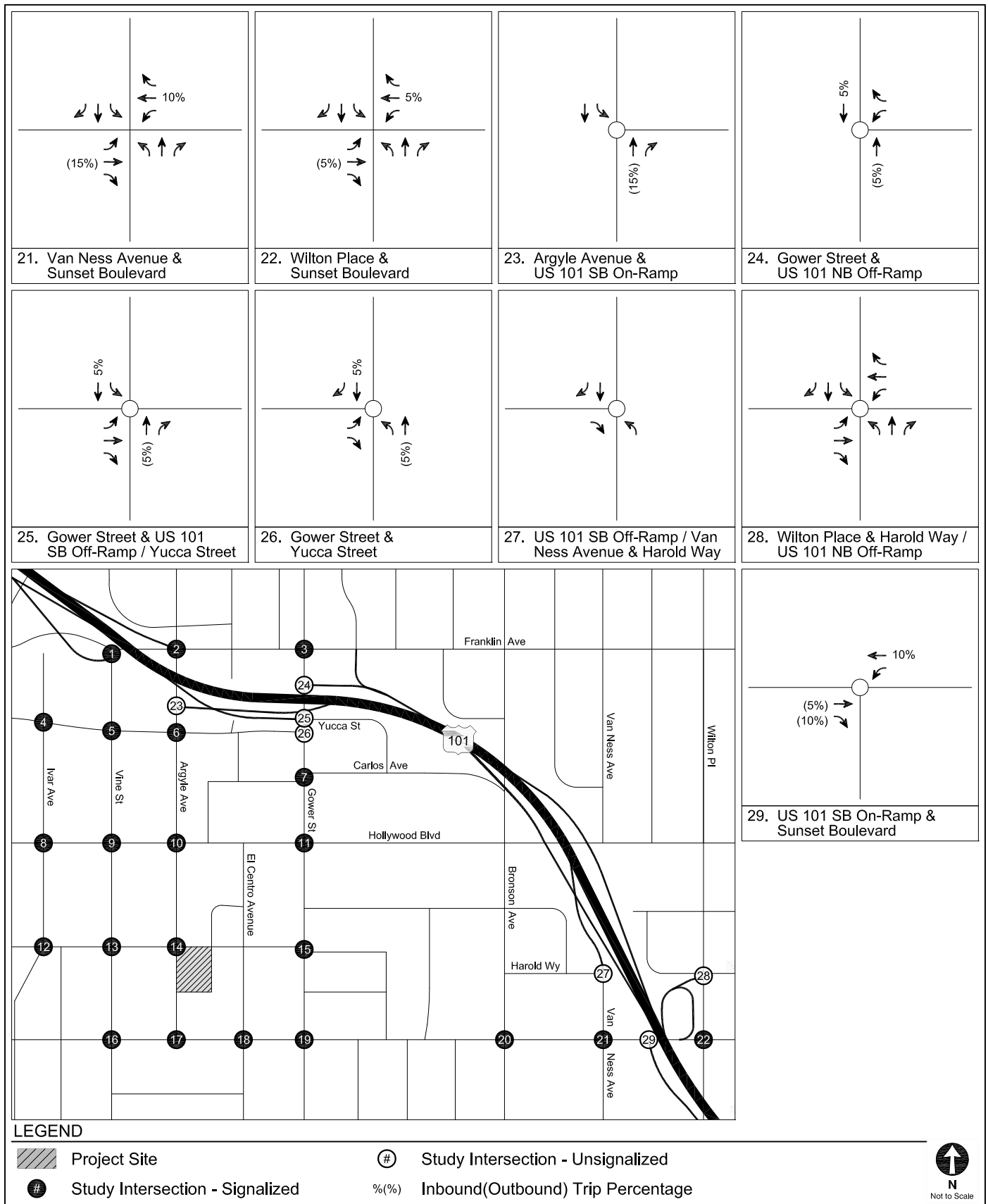
TRIP DISTRIBUTION
COMMERCIAL

FIGURE
3B



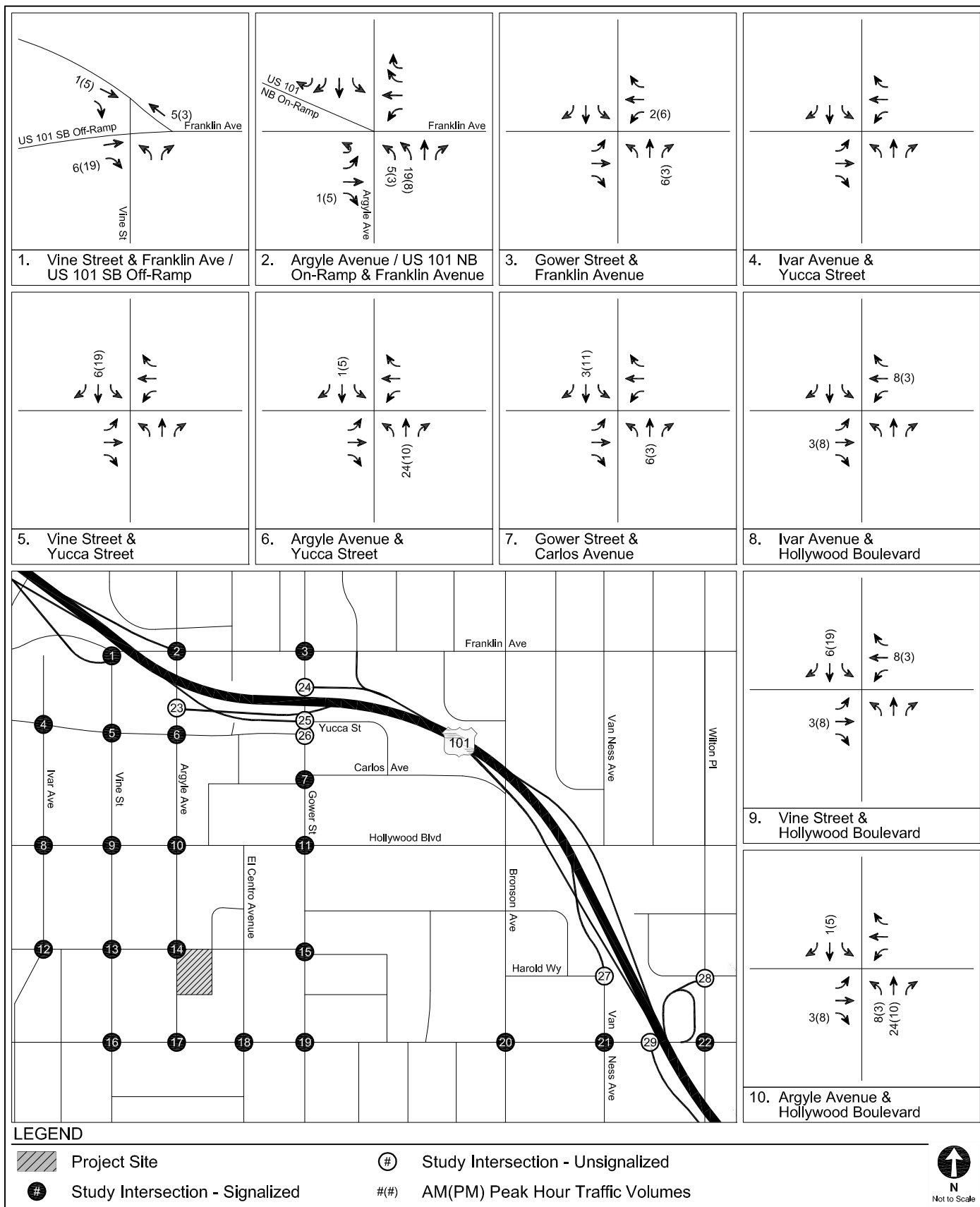
TRIP DISTRIBUTION
COMMERCIAL

FIGURE
3B (CONT.)



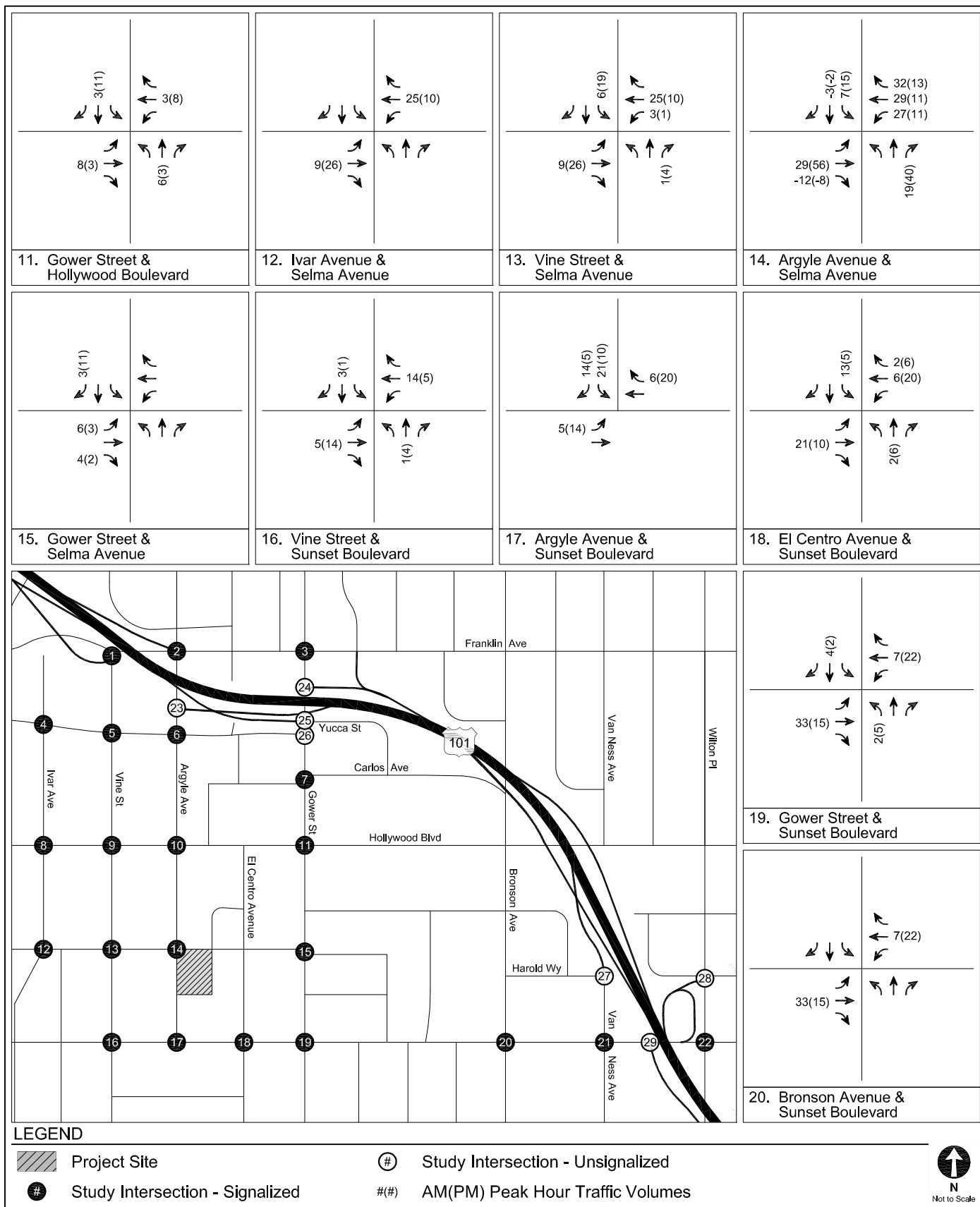
TRIP DISTRIBUTION
COMMERCIAL

FIGURE
3B (CONT.)



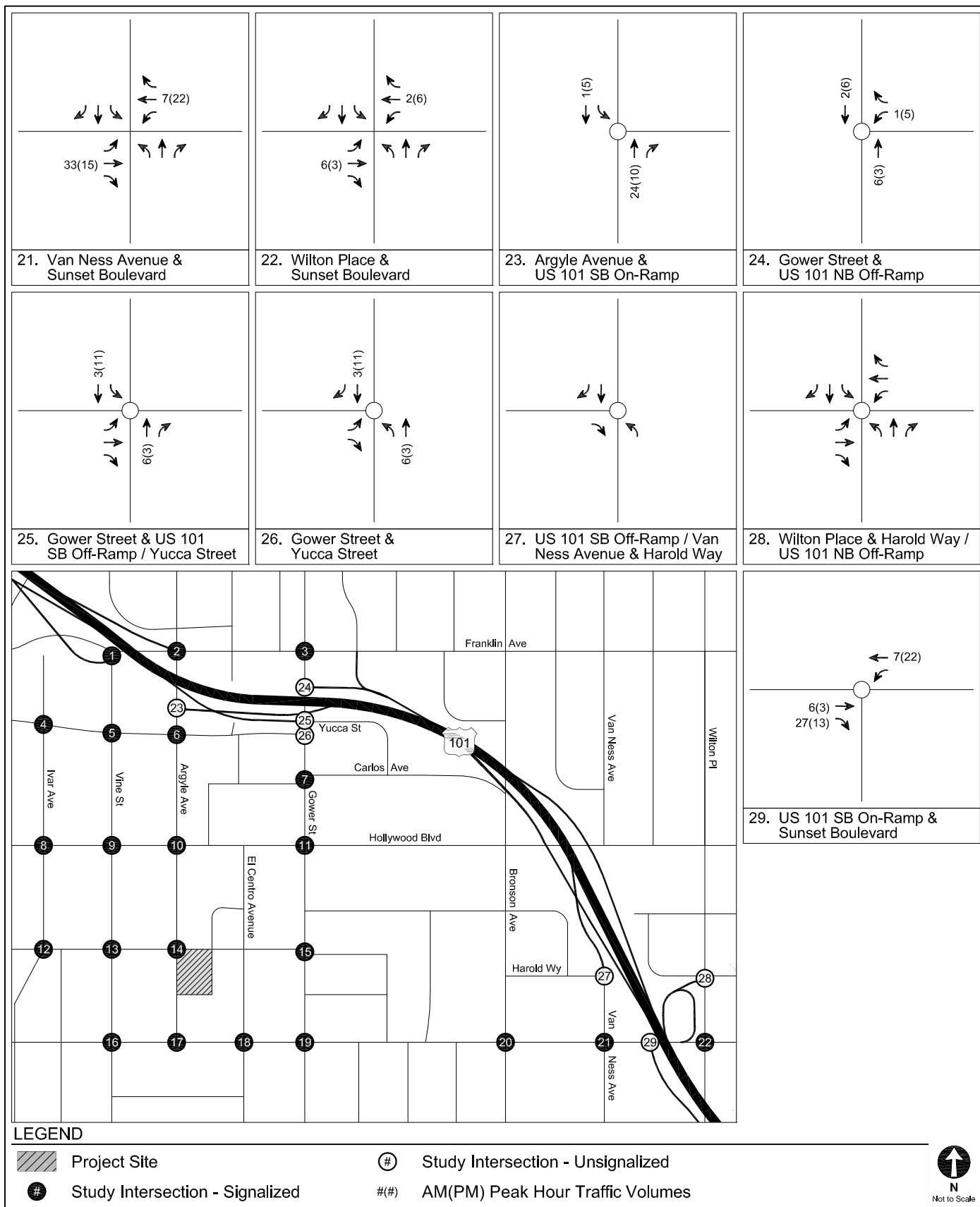
NET PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4A



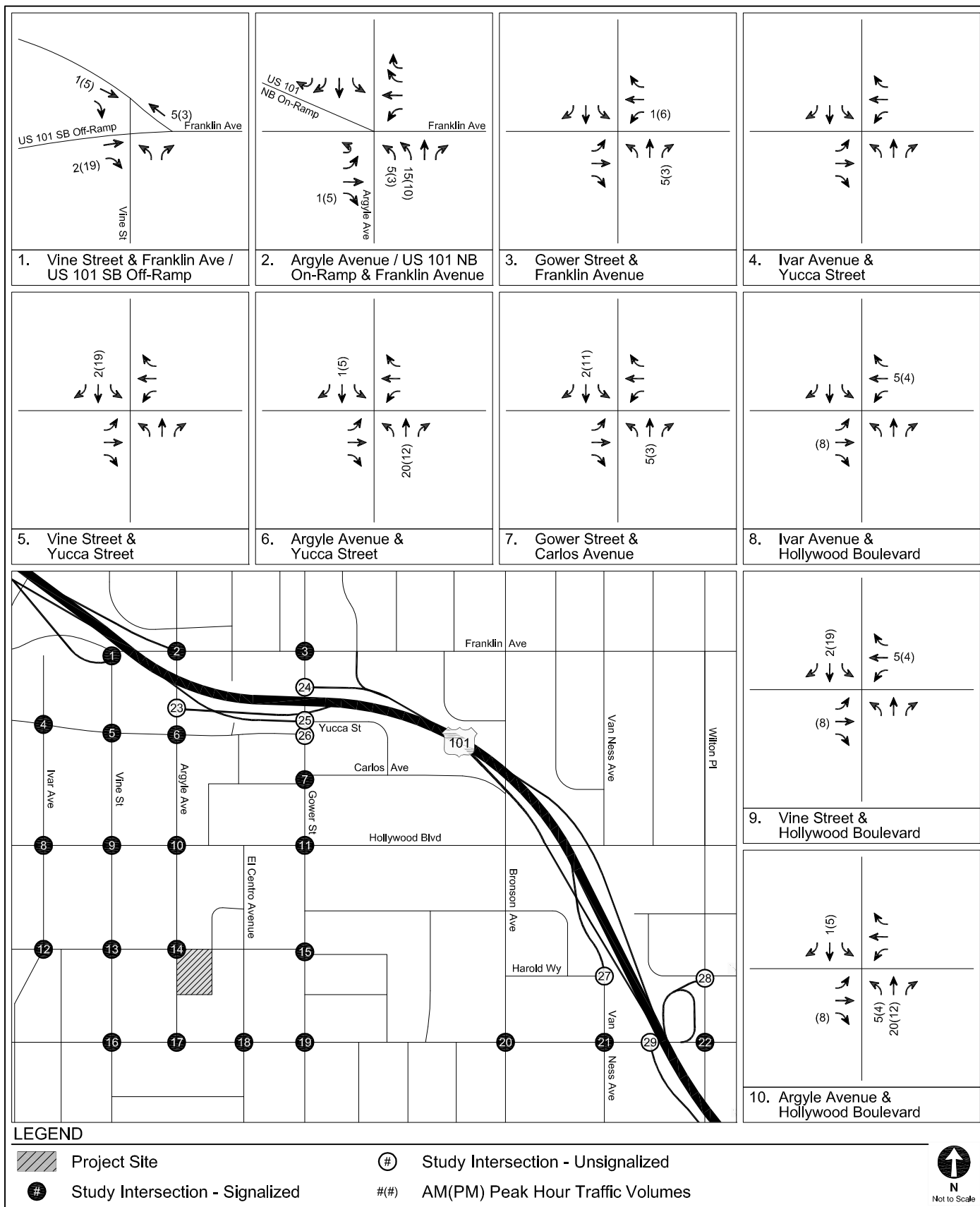
NET PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4A (CONT.)



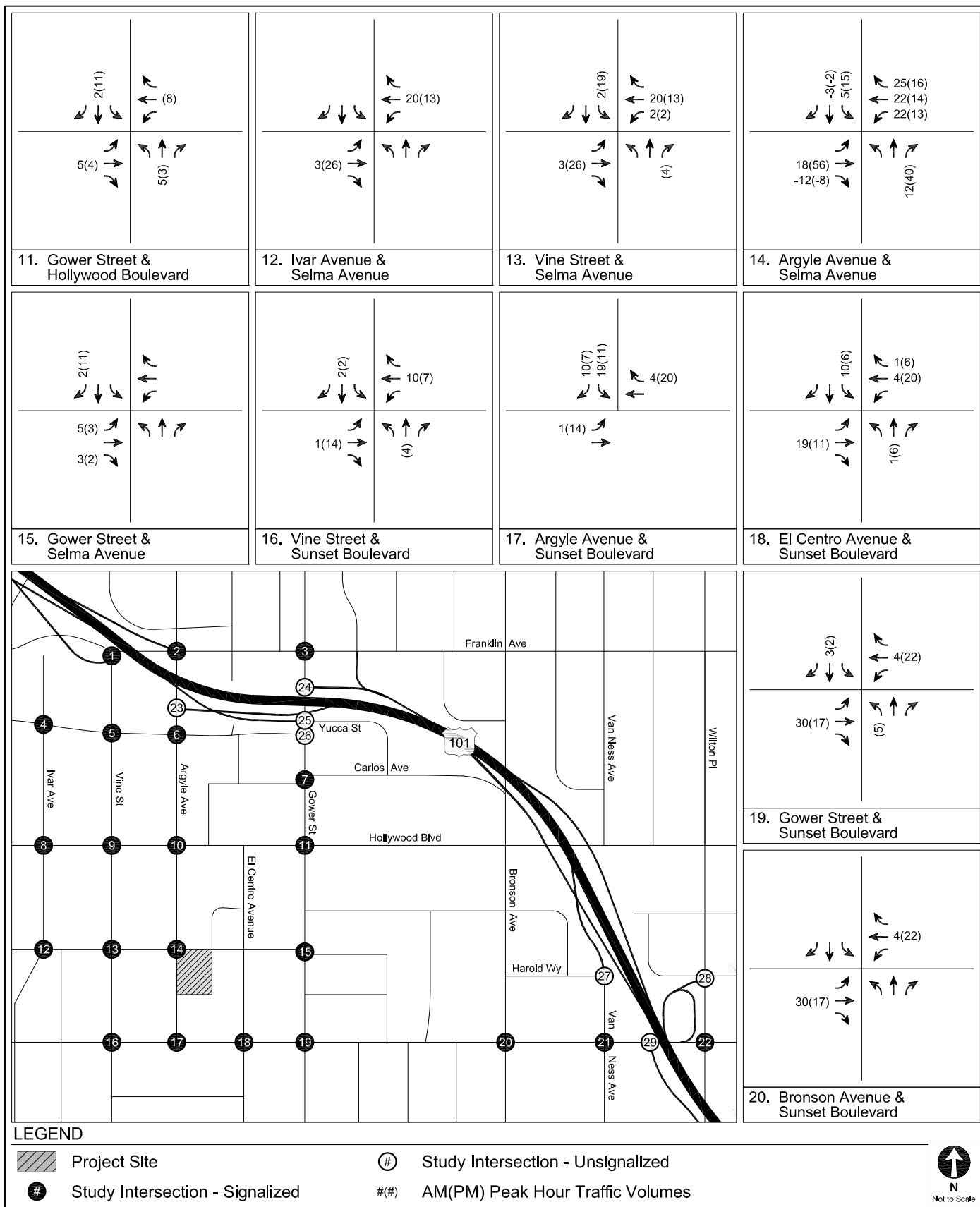
NET PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4A (CONT.)



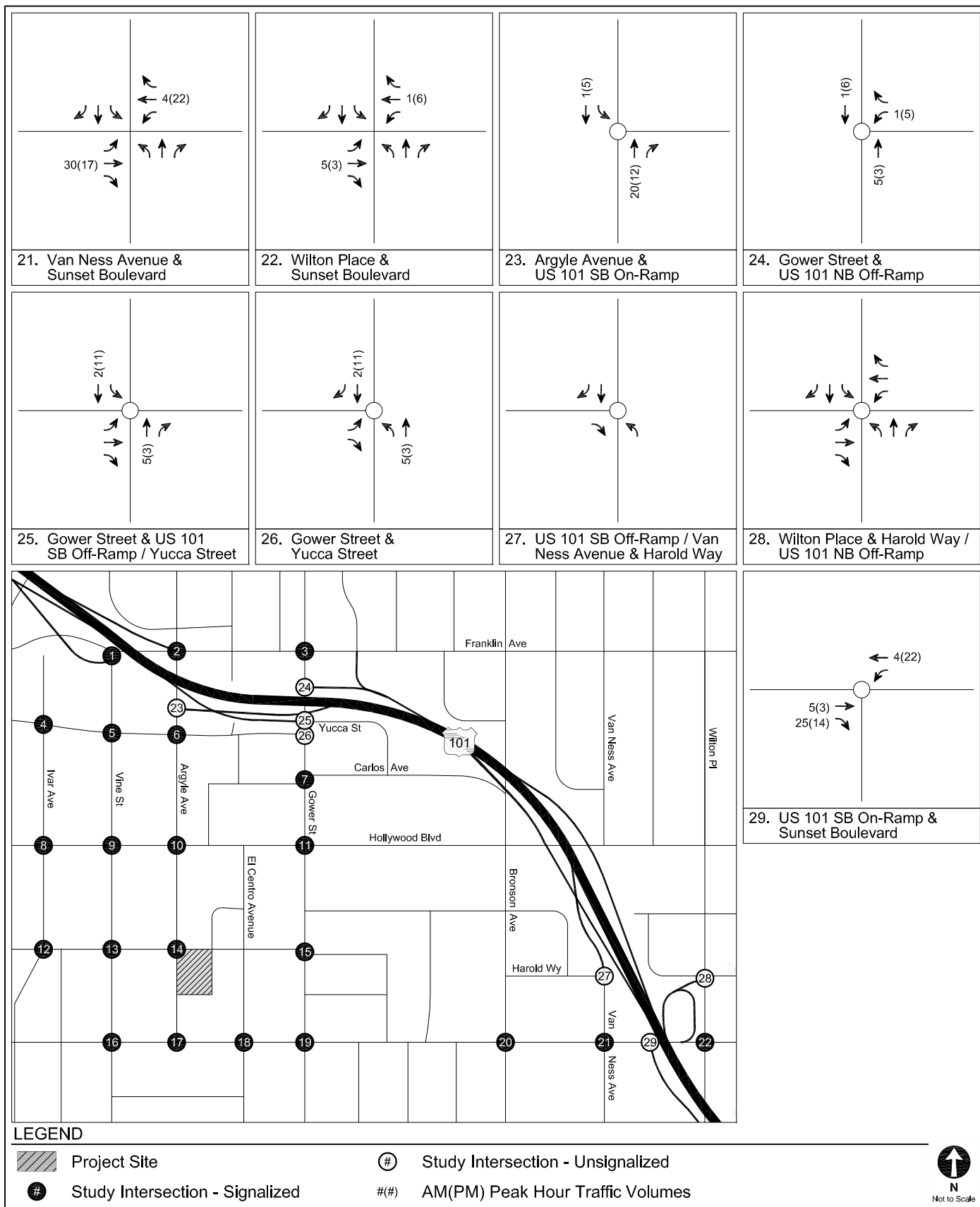
NET PROJECT-ONLY - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4B



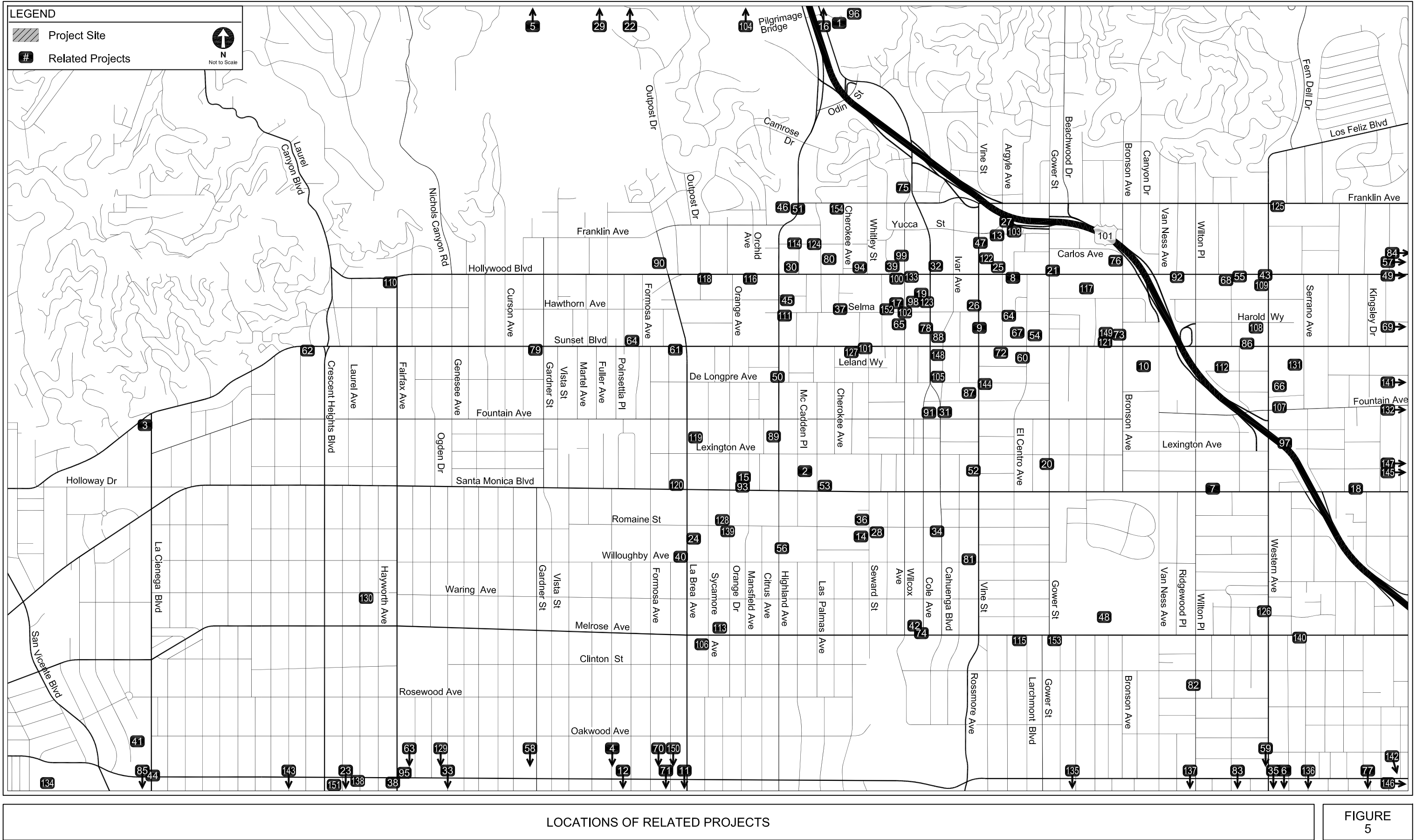
NET PROJECT-ONLY - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4B (CONT.)



NET PROJECT-ONLY - SUPERMARKET OPTION
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4B (CONT.)



**TABLE 3
RELATED PROJECTS**

No.	Project	Address	Use	Trip Generation [a]						
				Daily	AM Peak Hour			PM Peak Hour		
					Inbound	Outbound	Total	Inbound	Outbound	Total
1.	Mixed-Use	3400 N Cahuenga Blvd	53 apartment units, 5,000 sf retail, 11,385 sf office, and 40,300 sf health club	1,518	115	110	225	121	67	188
2.	McCadden Campus (LGBT)	1118-1139 N McCadden Pl	100 senior housing units, 92 youth housing units, 17,040 sf office and 29,650 sf youth/senior center	1,346	49	31	80	53	56	109
3.	Sunset Millennium	8500 W Sunset Blvd	371 hotel rooms, 34,000 sf restaurants/retail, 7,000 sf theater, 2,500 sf dining	5,412	205	149	354	213	221	434
4.	Desmond's Tower	5500 W Wilshire Blvd	175 apartment units	820	13	51	64	51	28	79
5.	Condominium	3450 N Cahuenga Blvd	68 condominium units and 59,000 sf retail	3,010	15	72	87	131	64	195
6.	Gaju Market (New California Market)	450 S Western Ave	130,500 sf retail	3,019	47	29	76	138	138	276
7.	Paseo Plaza Mixed-Use	5651 W Santa Monica Blvd	437 apartment units and 378,000 sf retail	6,831	50	200	250	419	225	644
8.	BLVD 6200 Mixed-Use	6200 W Hollywood Blvd	952 apartment units and 190,000 sf retail (Phase 1 Complete)	2,816	41	103	143	133	109	242
9.	Sunset & Vine Mixed-Use	1538 N Vine St	306 apartment units and 68,000 sf retail	3,049	27	109	136	191	103	294
10.	Sunset Bronson Studios	5800 W Sunset Blvd	404,799 sf office	2,690	356	48	404	64	314	378
11.	La Brea	101 S La Brea Ave	180 condominium units, 26,400 sf retail, and 3,000 sf other	1,503	11	52	63	62	30	92
12.	Third Street Mixed-Use Project	5863 W 3rd St	60 apartment units and 5,350 retail	1,248	29	140	169	85	42	127
13.	Yucca Street Condos	6230 W Yucca St	85 condominium units and 13,890 sf commercial	364	4	21	25	21	11	32
14.	Office	959 N Seward St	240,000 sf office	2,356	299	41	340	53	260	313
15.	Archstone Hollywood Mixed-Use Project	6911 W Santa Monica Blvd	374 condominium units and 15,000 sf retail	2,279	18	90	108	125	61	186
16.	Residential Project (Apartments)	3716 N Barham Blvd	364 Apartment Units	1,290	0	0	92	0	0	120
17.	6516 - 6525 Selma Hotel	6516 W Selma Ave	212 hotel rooms, 2,308 sf café, 11,148 sf lounge/bar	2,241	71	50	121	105	84	189
18.	Mixed-Use	5245 W Santa Monica Blvd	68 apartment units and 51,674 sf retail	2,526	13	53	66	137	74	211
19.	Selma Hotel	6417 W Selma Ave	180 room hotel and 12,840 sf restaurant	1,849	6	4	10	61	59	120
20.	Hollywood Production Center	1149 N Gower St	57 residential units	704	5	22	27	22	12	34
21.	Hollywood Gower Mixed-Use	6100 W Hollywood Blvd	220 apartment units and 3,270 sf restaurant	1,397	21	72	93	76	45	121
22.	Gas Station & Convenience Store	3704 N Cahuenga Blvd	Adding 1,700 sf to existing "gas station w/ conv. Store"	1,157	48	45	93	58	58	116
23.	Wilshire & Crescent Heights Mixed-Use	6245 W Wilshire Blvd	4200 sf bank, 133 apts, 4 condos & 1570 sf coffee shop	1,214	29	74	103	32	2	34
24.	Mixed-Use Office/Retail	936 N La Brea Ave	88,750 sf office and 12,000 sf retail	911	24	5	29	14	37	38
25.	Pantages Theater Office	6225 W Hollywood Blvd	214,000 sf office	1,918	243	33	276	43	411	254
26.	Selma & Vine Office Project	1601 N Vine St	121,609 sf office and 2,613 sf commercial	1,239	155	27	182	39	145	184
27.	Argyle Hotel Project	1800 N Argyle Avee	225 room hotel	1,360	22	37	59	60	18	78
28.	Seward Street Office Project	956 N Seward St	130,000 sf office	1,240	165	21	186	29	151	180
29.	NBC Universal Evolution Plan	100 Universal City Plaza	Theme park, production studio, and entertainment district master plan	19,139	1,271	489	1,760	307	1,391	1,698
30.	Restaurant	6757 W Hollywood Blvd	17,717 sf restaurant	1,220	5	5	10	35	17	52
31.	Mixed-Use	1311 Cahuenga Boulevard	369 apartment units, 2,570 sf retail	2,564	39	151	190	154	85	239
32.	Hotel & Restaurant Project	6381 W Hollywood Blvd	80 hotel rooms and 15,290 sf restaurant	1,020	(19)	11	(8)	62	4	66
33.	Residential	6298 W 3rd St	300 condominium units	(248)	17	85	102	(17)	(8)	(25)
34.	Television Center (TVC Expansion)	6300 W Romaine St	114,725 office, 40,927 gym and 38,072 dance studio	1,596	199	27	226	20	17	37
35.	Western Galleria Market	100 N Western Ave	98 apartment units and 30,000 sf retail	940	17	40	57	54	38	92
36.	Hollywood Center Studios Office	6601 W Romaine St	104,155 sf office and 1,970 sf storage	808	88	4	92	12	39	51
37.	Selma Community Housing	1603 N Cherokee Ave	66 affordable apartment units	439	7	27	34	26	15	41
38.	Beverly & Fairfax Mixed-Use	7901 W Beverly Blvd	71 apartment units and 11,454 sf retail	493	7	29	36	30	16	46
39.	Hudson Building	6523 W Hollywood Blvd	15,000 sf restaurant	547	(16)	(11)	(27)	32	4	36
40.	La Brea Gateway	915 N La Brea Ave	33,500 sf supermarket and 179 apartment units	2,615	5	86	91	158	90	248
41.	375 Luxe	375 N La Cienega Blvd	125 apts & 7900 sf retail	168	8	47	55	34	11	45
42.	Residential	712 N Wilcox Ave	100 apartment units	550	8	34	42	33	18	51
43.	Restaurant & Deli	5500 W Hollywood Blvd	4,648 sf restaurant and 1,000 sf deli	441	6	6	12	22	15	37
44.	Mixed-Use	316 N La Cienega Blvd	45 apts, 800 sf café, 3680 sf retail	602	41	53	94	31	22	53
45.	Mixed-Use	1610 N Highland Ave	248 apartment units and 14,710 sf retail	1,805	22	90	112	96	54	150
46.	Highland Avenue Indigo Hotel Project	1841 N Highland Ave	100 business hotel rooms	694	29	19	48	26	24	50
47.	Millennium Hollywood Mixed-Use Project	1740 N Vine St	492 apartment units, 200 hotel rooms, 100,000 sf office, 35,000 sf fitness club, 15,000 sf retail, 34,000 sf restaurant	9,922	321	253	574	486	438	924
48.	Paramount Studios	5555 W Melrose Ave	21,000 sf sound stage, 1,900 sf stage support, 635,500 sf production office, 638,100 sf office, and 64,200 sf retail	9,830	712	213	925	297	736	1,033
49.	4900 Hollywood Mixed-Use	4900 W Hollywood Blvd	200 apartment units and 25,000 sf retail	1,585	24	75	99	89	56	145
50.	Apartments	1411 N Highland Ave	90 apartment units	823	23	43	66	45	26	71
51.	Apartment Project	1824 N Highland Ave	118 apartment units	667	10	41	51	40	22	62
52.	Hotel	1133 N Vine St	112 hotel rooms	457	19	13	32	18	15	33
53.	The Lexington Mixed-Use	6677 W Santa Monica Blvd	695 apartment units, 24,900 sf commercial	1,938	127	182	309	170	122	292
54.	Columbia Square Mixed-Use	6121 W Sunset Blvd	200 apartment units, 422,500 sf office, 25,500 sf restaurant, 16,500 sf retail, and 15,000 sf health club	6,327	477	211	688	254	428	682
55.	Mixed-Use (High Line West)	5550 W Hollywood Blvd	278 apartment units and 12,500 sf retail	1,267	(3)	43	40	47	17	64

Notes

[a] Related projects information provided by LADOT, Department of City Planning, and recent traffic studies in the area.

TABLE 3 (CONTINUED)
RELATED PROJECTS

No.	Project	Address	Use	Trip Generation [a]						
				Daily	AM Peak Hour			PM Peak Hour		
					Inbound	Outbound	Total	Inbound	Outbound	Total
56.	Tutoring Center	927 N Highland Ave	100 school students and 18 tutoring employees	155	4	(1)	3	23	17	40
57.	Kaiser Permanente Medical Office	4905 W Hollywood Blvd	89,000 sf office	1,285	68	18	86	35	92	127
58.	Office - Museum Square	5757 W Wilshire Bl	249,500 sf office	1,798	251	34	285	47	228	275
59.	Restaurants	135 N Western Ave	11904 sf restaurant	330	21	20	41	9	9	18
60.	6200 W Sunset Boulevard	6200 W Sunset Blvd	270 apartment units, 10,000 sf of restaurant, 2,420 sf retail	3,171	88	160	248	172	103	275
61.	Mixed-Use	7120 W Sunset Blvd	44 apartment units and 2,900 sf commercial	397	0	14	14	25	4	29
62.	Sunset Crescent Heights	8150 Sunset Blvd	249 apartment units, 51,150 sf retail, 24,811 sf supermarket, 5,094 sf bank, 22,189 sf restaurant, and 8,095 sf dance studio	1,077	(92)	10	(82)	158	58	216
63.	Academy Museum of Motion Pictures	6067 W Wilshire Blvd	Museum 5000 visitors, 135 employees, 5 ksf store, 4 KSF restaurant	2,693	0	0	0	56	261	317
64.	The Chaplin Hotel Project	7219 W Sunset Boulevard	96 hotel rooms & 2,800 sf restaurant	761	27	18	45	27	29	56
65.	Sunset + Wilcox	1541 N Wilcox Ave	225 hotel rooms and 13,004 sf restaurant	3,359	103	80	183	147	114	261
66.	Mixed-Use	1350 N Western Ave	52 apartment units and 4,200 sf retail	243	(36)	39	3	29	(45)	(16)
67.	Palladium Residences	6201 W Sunset Blvd	731 apartment units, 5,000 sf restaurant, 21,000 sf retail, and 2,000 sf coffee shop	4,913	128	228	356	234	169	403
68.	5600 W Hollywood Boulevard	5600 W Hollywood Blvd	32 apartment units, 1,300 sf commercial	269	4	13	17	15	10	25
69.	City Lights Mixed-Use	1515 N Hillhurst Ave	202 Apts, 5.35 KSF Retail, 5.05 KSF Restaurant, 3.025 KSF Coffee/Donut	1,664	43	92	134	111	73	183
70.	925 La Brea Avenue	925 S La Brea Ave	17,000 sf retail and 53,000 sf office	810	66	11	77	24	71	95
71.	904 La Brea Avenue	904 S La Brea Ave	169 apartment units and 40,000 sf retail	2,072	25	68	93	106	80	186
72.	6250 Sunset (Nickelodeon)	6250 W Sunset Blvd	200 apartment units, 13,510 sf office, 13,471 sf other, and 4,700 sf retail	1,473	52	80	132	71	50	121
73.	Mixed-Use	5901 Sunset Blvd	274,000 sf office and 26,000 sf supermarket	3,835	350	61	411	122	338	460
74.	2014 Residential	707 N Cole Ave	84 apartment units	236	2	15	18	13	6	19
75.	Hotel	1921 Wilcox Ave	159 hotel rooms and 3,050 sf restaurant	1,687	68	49	117	66	59	125
76.	1717 Bronson Avenue	1717 N Bronson Ave	93 apartment units	436	6	27	33	26	14	40
77.	Hotel & Retail	4110 W 3rd St	173 room hotel & 2780 sf retail	1,185	45	35	80	46	40	86
78.	Cahuenga Boulevard Hotel	1525 N Cahuenga Blvd	64 hotel rooms, 1,500 sf commercial, and 3,550 sf restaurant	469	13	9	22	17	17	34
79.	Sunset Mixed-Use	7500-7510 W Sunset Blvd	236 apartment units and 30,000 sf retail	4,288	21	84	105	81	43	124
80.	Las Palmas Residential (Hollywood Cherokee)	1718 N Las Palmas Ave	29 condominium units, 195 apartment units, and 985 sf retail	1,333	21	84	105	81	43	124
81.	Mixed-Use	901 N Vine St	85 apartment units, 4,000 sf retail, and 4,000 sf restaurant	(32)	4	26	30	(5)	1	(4)
82.	Apartments	525 N Wilton Place	88 apartment units	449	6	28	34	27	14	41
83.	Apartments	3875 W Wilshire Blvd	220 apartment units	1,238	19	77	96	77	42	119
84.	Hardware Store	4905 W Hollywood Blvd	36,600 sf retail	1,404	13	12	25	64	68	132
85.	Caruso Affiliated	333 S La Cienega Blvd	145 apts, 27 ksf supermarket, 3560 sf restaurant	2,020	35	71	106	114	77	191
86.	Target Retail Shopping Center Project	5520 W Sunset Blvd	163,862 sf discount store and 30,887 shopping center	4,903	52	21	73	211	211	422
87.	Academy Square	1341 Vine St	233,665 sf office, 250 apartment units, 49,135 sf commercial	4,903	52	21	73	211	211	422
88.	Hotel	6409 W Sunset Blvd	221 hotel rooms and 1,893 sf retail	851	32	13	45	36	43	79
89.	Mixed-Use	1233 N Highland Ave	72 apartment units	714	11	27	38	38	28	66
90.	Mixed-Use	7107 Hollywood Blvd	410 apartment units, 5,000 sf restaurant, and 5,000 sf retail	2,637	49	157	206	167	86	253
91.	Mixed-Use	1310 N Cole Ave	375 apartment units and 2,800 office	2,226	20	139	159	139	58	197
92.	5750 Hollywood	5750 Hollywood Blvd	162 apartment units and 5,000 sf commercial	1,060	16	61	77	62	36	98
93.	Mixed-Use at 6901 Santa Monica Bl	6901 Santa Monica Blvd	231 apartment units, 5,000 sf restaurant, and 10,000 sf retail	1,010	0	78	78	66	18	84
94.	Hyatt House Hotel & Retail	6611 W Hollywood Blvd	167 hotel rooms, 10,500 sf retail, and 5,400 sf restaurant	529	26	21	47	14	34	48
95.	Jewish Family Service	320 N Fairfax Ave	28341 sf office	276	28	9	37	4	21	25
96.	John Anson Ford Theater	2580 Cahuenga Blvd East	311 net new theater seats, 5,400 sf restaurant, and 30 office employees	610	34	1	35	18	43	61
97.	Hollywood Central Park	Hollywood Freeway (US 101)	38 acre park, amphitheater, and neighborhood uses	2,298	104	69	173	115	89	204
98.	TAO Restaurant	6421 W Selma Ave	Replace auto body shop with 114-room hotel and 17,607 sf quality restaurant	1,688	8	7	15	94	46	140
99.	Wilcox Hotel	1717 Wilcox Ave	140 hotel rooms and 10,000 sf restaurant	1,750	77	55	132	73	59	132
100.	Restaurant & Multi-Purpose Entertainment Venue	6506 W Hollywood Blvd	13,000 sf bar and restaurant	1,179	0	0	0	78	40	118
101.	Hotel	6600 W Sunset Blvd	50 hotel rooms	409	17	11	28	15	15	30
102.	Hotel	6500 Selma Avenue	70 hotel rooms and 4,320 sf restaurant	1,121	48	36	84	47	38	85
103.	Mixed-Use	6220 W Yucca St	260 hotel rooms, 191 apartment units, 6,980 sf restaurant	3,182	114	119	233	144	105	249
104.	Apartments	2864 N Cahuenga Blvd	300 apartments	1,895	30	115	145	114	62	176
105.	Godfrey Hotel	1400 N Cahuenga Blvd	220-room hotel & 2,275 sf restaurant	1,866	63	53	116	72	58	130
106.	Melrose Crossing Mixed-Use	7000 Melrose Avenue	40 apartment units and 7,565 sf retail	334	4	17	21	20	12	32
107.	Apartments	5460 W Fountain Ave	75 apartment units	499	0	0	38	0	0	47
108.	SunWest Project Mixed-Use	5525 W Sunset Blvd	293 apartment units, 33,980 sf commercial	3,411	80	124	204	203	142	345
109.	Mixed-Use	1657 N Western Avenue	91 apartment units, 39,350 sf retail, 25,900 sf office and 16 senior housing units	702	10	29	39	37	25	62
110.	7900 Hollywood Residential	7900 Hollywood Blvd	50 apartment units	251	3	16	19	14	8	22

Notes

[a] Related projects information provided by LADOT, Department of City Planning, and recent traffic studies in the area.

TABLE 3 (CONTINUED)
RELATED PROJECTS

No.	Project	Address	Use	Trip Generation [a]						
				Daily	AM Peak Hour			PM Peak Hour		
					Inbound	Outbound	Total	Inbound	Outbound	Total
111.	Hollywood Crossroads	1540-1552 Highland Ave	950 residential units, 308 hotel rooms, 95,000 sf office, and 185,000 sf commercial retail uses	17,734	657	664	1,321	842	682	1,524
112.	Hollywood De Longpre Apartments	5632 De Longpre Ave	185 apartment units	800	(31)	25	(6)	50	19	69
113.	Mixed-Use	6915 Melrose Avenue	13 condominium units and 7,500 sf retail	398	2	12	14	96	54	35
114.	Apartments & Retail	6758 W Yucca St	270 apartment units and 8,500 sf retail	(138)	(17)	(68)	(85)	9	5	14
115.	Condos & Retail	5663 Melrose Avenue	96 condominium units and 3,350 sf retail	797	8	37	45	96	54	63
116.	Retail & Office Building	6904 W Hollywood Blvd	29,900 sf retail and 16,700 sf office	352	17	11	28	18	24	42
117.	Residential Development	6001 W Carlton Way	42 condominium units	246	3	15	18	96	54	22
118.	Apartments	7046 W Hollywood Blvd	42 apartment units	279	4	17	21	17	9	26
119.	Mixed-Use	1222 N La Brea Avenue	187 apartment units and 19,559 sf commercial retail uses	2,901	43	173	216	179	96	275
120.	Mixed-Use	7113 W Santa Monica Blvd	184 apartment units and 13,350 sf commercial retail uses	2,368	33	131	164	144	78	222
121.	Sunset & Gordon Mixed-Use	5935 W Sunset Blvd	311 condominium units, 40,000 sf office, 8,500 sf restaurant, and 5,000 sf retail	1,248	29	140	169	85	42	127
122.	citizenM Hotel	1718 Vine St	216 hotel rooms and 4,354 sf restaurant	1,370	70	52	122	47	51	98
123.	Restaurant Expansion	1615 N Cahuenga Blvd	10,270 sf restaurant use	294	2	1	3	17	7	24
124.	Apartments	1749 Las Palmas Avenue	38 apartment units	147	2	9	11	9	5	14
125.	Mixed-Use	1868 N Western Avenue	104 apartment units, 13,500 sf retail	363	(5)	18	13	20	7	14
126.	747 N Western Avenue	747 N Western Avenue	44 apartment units and 7,700 sf retail	622	8	21	29	32	24	56
127.	6630 W Sunset Boulevard	6630 W Sunset Blvd	40 apartment units	266	4	16	20	16	9	25
128.	1001 N Orange Drive	1001 N Orange Drive	53,000 sf office	585	73	10	83	13	66	79
129.	LACMA	5905 Wilshire Blvd	387,500 sf museum	--	--	--	--	--	--	--
130.	750 N Edinburgh	750 N Edinburgh Ave	8 single family homes	23	1	1	2	2	1	3
131.	Sunset & Western	5420 W Sunset Blvd	732 apartment units, 60,000 sf supermarket, 38,000 sf commercial & 9,000 sf live/work space	2,604	17	206	223	168	80	248
132.	Sunset-Junction	4000-4301 Sunset Blvd	297 apartment units, 25,877 sf commercial	2,947	83	154	237	156	95	251
133.	Hollywood/Wilcox	6430-6440 W Hollywood Blvd	260 apartment units, 3,580 sf office, 11,020 sf retail, 3,200 sf restaurant	1,625	23	98	121	99	44	143
134.	Cedars-Sinai Medical Center Project - West Tower	8723 W Alden Dr	New medical building with 100 beds & new parking facility	1,181	79	34	113	47	83	130
135.	Apartments	850 S Crenshaw Blvd	44 apartment units	293	4	18	22	18	10	28
136.	4074 W 5th Street Mixed Use	4074 W 5th St	119 apartment units & 13,000 sf retail	908	13	44	57	51	32	83
137.	Mixed-Use	3986 W Wilshire Blvd	228 apartment units, 5,000 sf coffee shop, 5,000 sf restaurant & 12,000 sf retail	1,354	100	23	123	124	77	201
138.	Edin Park	8001 W Beverly Blvd	12,685 sf retail & 15,245 sf restaurant	2,110	84	66	150	97	71	168
139.	7007 W Romaine Street Office and Retail	7007 W Romaine St	53,356 sf office & 3,555 sf retail	567	63	7	70	17	58	75
140.	Mixed-Use	4914 W Melrose Ave	45 live/work units & 3,760 sf retail	460	7	20	27	25	17	42
141.	Hospital Seismic Retrofit	1300 N Vermont Ave	Replace existing hospital and ancillary uses with 30,933 sf office	290	36	5	41	6	30	36
142.	Postpartum Extended Care & Retail	257 S Mariposa Ave	Postpartum extended care with 3,490 sf retail & 98 apartment units	772	10	41	51	44	25	69
143.	Hotel 6399 Wilshire Boulevard	6399 W Wilshire Blvd	176-room hotel	377	(63)	19	(45)	22	(48)	(26)
144.	Onni Group Mixed-Use Development	1360 N Vine St	420 apartments with 60,000 sf commercial	3,768	57	157	214	202	140	342
145.	Hotel - Restaurant	1629 N Griffith Park Blvd	26 hotel rooms, 3,784 sf restaurant, and 2,497 sf bar/lounge	0	0	0	0	25	13	38
146.	AMCAL - Meridian Apts	241 N Vermont Ave	100 apartment units, 5,000 sf retail	510	7	38	45	33	16	49
147.	4121 Santa Monica Shopping Center	4121 W Santa Monica Blvd	14,378 sf shopping center	344	4	2	6	14	16	30
148.	6400 Sunset Mixed-Use	6400 Sunset Boulevard	192 apartment units, 3,000 sf retail, 4,000 sf restaurant	143	16	72	88	30	(15)	15
149.	Mixed-Use	5939 W Sunset Blvd	299 apartment units, 36,688 sf office, 13,279 sf retail	3,731	152	191	343	182	152	334
150.	Mixed-Use	850 S La Brea Ave	40 apartment units, 4,000 sf retail	437	6	18	24	23	17	40
151.	Unified Elder Care Facility/Mixed-Use	8052 W Beverly Blvd	5,000 sf synagogue, 102 apartment units, 15,000 medical office, 1,000 sf retail	725	19	26	45	21	49	70
152.	1600 Schrader	1600 N Schrader Blvd	168 hotel rooms, 6,536 sf restaurant	1,714	70	50	120	69	59	128
153.	Melrose & Beachwood	5570 W Melrose Ave	52 apartment units, 5,277 sf commercial	430	(1)	20	19	21	10	31
154.	Montecito Senior Housing	6650 W Franklin Avenue	68 senior apartments	234	5	9	14	9	8	17
OTHER AREA-WIDE PROJECTS										
Project		Description			Extents					
Hollywood Community Plan Update		The Hollywood Community Plan Update proposes updates to land use policies and the land use diagram. The proposed changes would primarily increase commercial and residential development potential in and near the Regional Center Commercial portion of the community and along selected corridors in the Community Plan Area. The decreases in development potential would be primarily focused on low to medium scale multi-family residential neighborhoods to conserve existing density and intensity of those neighborhoods. The projected population growth has been captured in the conservative ambient growth rate assumed in the Future analysis.			South of City of Burbank, City of Glendale, and SR 134; west of Interstate 5; north of Melrose Avenue; south of Mulholland Drive, City of West Hollywood, Beverly Hills, including land south of the City of West Hollywood and north of Rosewood Avenue between La Cienega Boulevard and La Brea Avenue.					

Notes

[a] Related projects information provided by LADOT, Department of City Planning, and recent traffic studies in the area.

TABLE 4
FREEWAY SEGMENT SCREENING PROCESS
EXISTING OPERATING CONDITIONS (YEAR 2017)

Freeway Segment	Direction	Number of Lanes [a]	Capacity [b]	Volume [c]	V/C Ratio	Project Traffic	Percent of Capacity	Meets Screening Criteria? [d]
AM Peak Hour								
US 101 between Highland Avenue and Cahuenga Boulevard	NB SB	4 5	8,000 10,000	6,263 4,312	0.78 0.43	19 6	0.2% 0.1%	NO NO
US 101 between Cahuenga Boulevard and Gower Street/Argyle Avenue	NB SB	4 4	8,000 8,000	6,451 5,328	0.81 0.67	19 6	0.2% 0.1%	NO NO
US 101 between Gower Street/Argyle Avenue and Hollywood Boulevard	NB SB	4 4	8,000 8,000	6,016 7,200	0.75 0.90	1 0	0.0% 0.0%	NO NO
US 101 between Hollywood Boulevard and Sunset Boulevard	NB SB	4 4	8,000 8,000	6,896 4,982	0.86 0.62	1 0	0.0% 0.0%	NO NO
US 101 between Sunset Boulevard and Western Avenue	NB SB	4 4	8,000 8,000	6,309 4,618	0.79 0.58	6 27	0.1% 0.3%	NO NO
PM Peak Hour								
US 101 between Highland Avenue and Cahuenga Boulevard	NB SB	4 5	8,000 10,000	5,644 4,819	0.71 0.48	8 19	0.1% 0.2%	NO NO
US 101 between Cahuenga Boulevard and Gower Street/Argyle Avenue	NB SB	4 4	8,000 8,000	4,740 4,074	0.59 0.51	8 19	0.1% 0.2%	NO NO
US 101 between Gower Street/Argyle Avenue and Hollywood Boulevard	NB SB	4 4	8,000 8,000	4,646 4,610	0.58 0.58	5 0	0.1% 0.0%	NO NO
US 101 between Hollywood Boulevard and Sunset Boulevard	NB SB	4 4	8,000 8,000	5,394 3,490	0.67 0.44	5 0	0.1% 0.0%	NO NO
US 101 between Sunset Boulevard and Western Avenue	NB SB	4 4	8,000 8,000	4,801 3,354	0.60 0.42	21 13	0.3% 0.2%	NO NO

Notes

[a] Auxiliary lanes and high-occupancy vehicle (carpool) lanes are not counted toward number of lanes.

[b] Lane capacity is 2,000 vehicles per hour per lane based on specifications in the screening criteria.

[c] Existing traffic volume based on available typical weekday data for April 2016 from Caltrans' *Performance Measurement System* (PeMS). An ambient growth rate of 1% per year was applied to reflect Existing year 2017 conditions.

[d] Based on the *First Amendment to the Agreement between LADOT and Caltrans District 7 on Freeway Impact Analysis Procedures* (Caltrans & LADOT, December 2015), further analysis of Caltrans facilities would be required if the freeway segment operates at LOS D and the project's peak hour trips would result in a 2% or more increase to the freeway mainline capacity, or if the freeway segment operates at LOS E or F and the project's peak hour trips would result in a 1% or more increase to the freeway mainline capacity. The Project would not result in a 1% or more increase to the freeway mainline capacity, thus, the screening criteria would not be met regardless of the freeway mainline LOS. For the purposes of a conservative analysis, freeway mainline segments were evaluated assuming worst case conditions (LOS E or F).

TABLE 5
FREEWAY OFF-RAMP SCREENING PROCESS
EXISTING OPERATING CONDITIONS (YEAR 2017)

Freeway Off-ramp	Peak Hour	Number of Lanes	Capacity [a]	Volume [b]	V/C Ratio	Project Traffic	Percent of Capacity	Meets Screening Criteria? [c]
US 101 Southbound Off-ramp to Vine Street	AM	2	1,700	1,578	0.93	6	0.4%	NO
	PM	2	1,700	1,143	0.67	19	1.1%	YES
US 101 Northbound Off-ramp to Gower Street / Beachwood Drive	AM	2	1,700	369	0.22	1	0.1%	NO
	PM	2	1,700	230	0.14	3	0.2%	NO
US 101 Southbound Off-ramp to Gower Street	AM	1	850	793	0.93	0	0.0%	NO
	PM	1	850	564	0.66	0	0.0%	NO
US 101 Northbound Off-ramp to Hollywood Boulevard	AM	1	850	518	0.61	0	0.0%	NO
	PM	1	850	355	0.42	0	0.0%	NO
US 101 Southbound Off-ramp to Hollywood Boulevard	AM	1	850	652	0.77	0	0.0%	NO
	PM	1	850	593	0.70	0	0.0%	NO
US 101 Northbound Off-ramp to Sunset Boulevard/Wilton Place	AM	1	850	1,053	1.24	5	0.6%	NO
	PM	1	850	981	1.15	16	1.9%	YES
US 101 Southbound Off-ramp to Sunset Boulevard	AM	1	850	923	1.09	0	0.0%	NO
	PM	1	850	674	0.79	0	0.0%	NO

Notes

[a] Off-ramp lane capacity is 850 vehicles per hour per lane based on specifications in the screening criteria.

[b] An ambient growth rate of 1% per year was applied to traffic count data and to the most recent traffic volume data from *2015 Traffic Volumes on California State Highways* (Caltrans, 2016) to reflect Existing year 2017 traffic conditions.

[c] Based on the *First Amendment to the Agreement between LADOT and Caltrans District 7 on Freeway Impact Analysis Procedures* (Caltrans & LADOT, December 2015), further analysis of Caltrans facilities would be required if the freeway off-ramp operates at LOS D and the project's peak hour trips would result in a 2% or more increase to the freeway off-ramp capacity, or if the freeway off-ramp operates at LOS E or F and the project's peak hour trips would result in a 1% or more increase to the freeway off-ramp capacity. For the purposes of a more conservative analysis, off-ramps were evaluated assuming worst case conditions (LOS E or F).

Appendix B

Intersection Lane Configurations

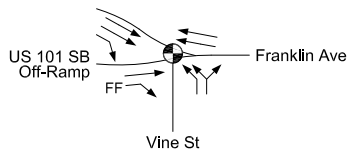
LEGEND

- Traffic Signal
- FF Free Flow

**EXISTING
CONDITIONS**

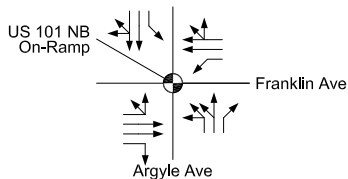
**FUTURE
CONDITIONS**

1. Vine Street &
Franklin Avenue /
US-101 Southbound Off-ramp



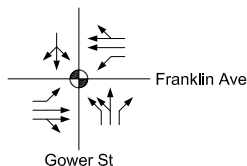
Same as
Existing Conditions

2. Argyle Avenue /
US-101 Northbound On-ramp &
Franklin Avenue



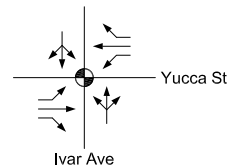
Same as
Existing Conditions

3. Gower Street &
Franklin Avenue



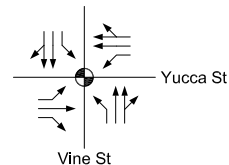
Same as
Existing Conditions

4. Ivar Avenue &
Yucca Street



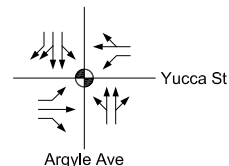
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Existing Conditions

5. Vine Street &
Yucca Street



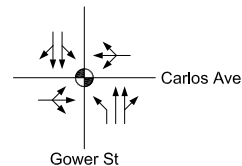
Same as
Existing Conditions

6. Argyle Avenue &
Yucca Street



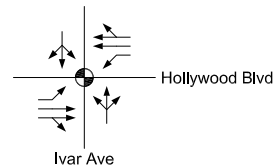
Same as
Existing Conditions

7. Gower Street &
Carlos Avenue



Same as
Existing Conditions

8. Ivar Avenue &
Hollywood Boulevard



Same as
Existing Conditions

INTERSECTION LANE CONFIGURATIONS

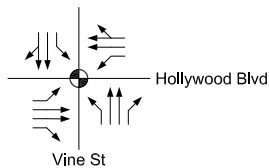
LEGEND



**EXISTING
CONDITIONS**

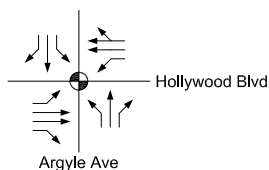
**FUTURE
CONDITIONS**

9. Vine Street &
Hollywood Boulevard



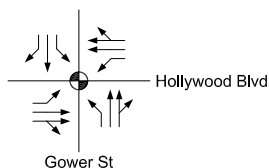
Same as
Existing Conditions

10. Argyle Avenue &
Hollywood Boulevard



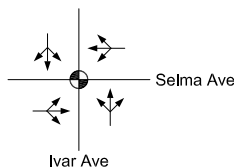
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11. Gower Street &
Hollywood Boulevard



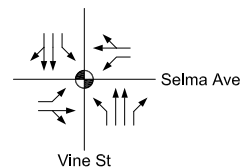
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12. Ivar Avenue &
Selma Avenue



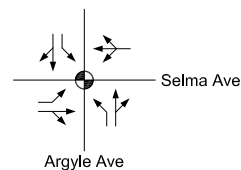
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13. Vine Street &
Selma Avenue



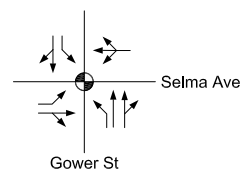
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14. Argyle Avenue &
Selma Avenue



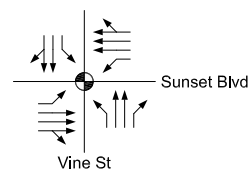
Same as
Existing Conditions

15. Gower Street &
Selma Avenue



Same as
Existing Conditions




16. Vine Street &
Sunset Boulevard



Same as
Existing Conditions

INTERSECTION LANE CONFIGURATIONS

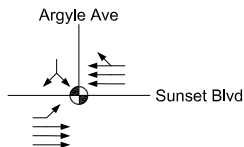
LEGEND

-  Traffic Signal
  Unsignalized
 Stop Sign

EXISTING CONDITIONS

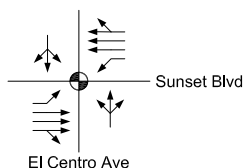
FUTURE CONDITIONS

17. Argyle Avenue & Sunset Boulevard



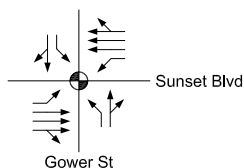
Same as Existing Conditions

18. El Centro Avenue & Sunset Boulevard



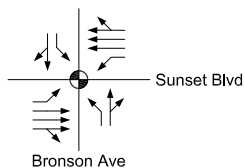
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19. Gower Street & Sunset Boulevard

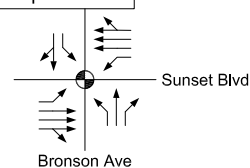


Same as Existing Conditions

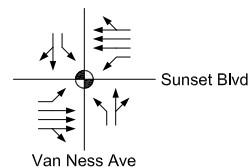
20. Bronson Avenue & Sunset Boulevard



Future Roadway Improvement

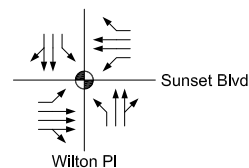


21. Van Ness Avenue & Sunset Boulevard



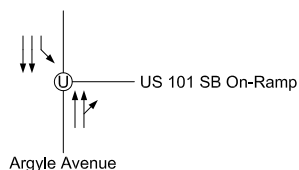
Same as Existing Conditions

22. Wilton Place & Sunset Boulevard



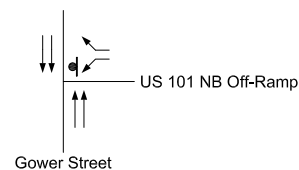
Same as Existing Conditions

23. Argyle Avenue & US 101 Southbound On-Ramp



Same as Existing Conditions

24. Gower Street & US 101 Northbound Off-Ramp



Same as Existing Conditions

INTERSECTION LANE CONFIGURATIONS

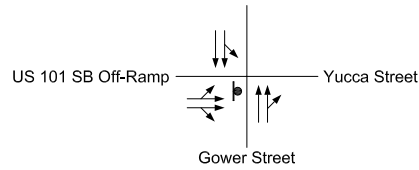
LEGEND

- ⓪ Unsignalized
- ◀ Stop Sign

EXISTING CONDITIONS

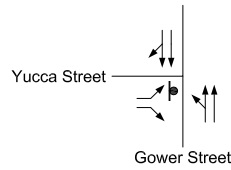
FUTURE CONDITIONS

25. Gower Street &
US 101 Southbound Off-Ramp /
Yucca Street



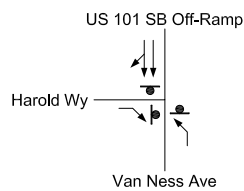
Same as
Existing Conditions

26. Gower Street &
Yucca Street



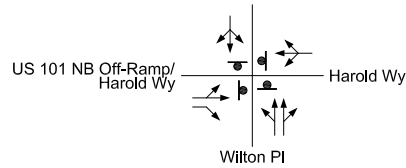
Same as
Existing Conditions

27. US 101 Southbound Off-Ramp /
Van Ness Avenue &
Harold Way



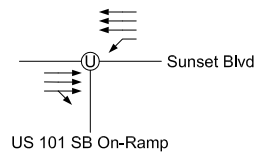
Same as
Existing Conditions

28. Wilton Place &
Harold Way /
US 101 Northbound Off-Ramp



Same as
Existing Conditions

29. US 101 Southbound On-Ramp &
Sunset Boulevard



Same as
Existing Conditions

INTERSECTION LANE CONFIGURATIONS

Appendix C
Traffic Counts

Turning Movement Count Report AM

Location ID: 1a
 North/South: Vine St
 East/West: Franklin Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	0	0	0	138	0	50	0	11	7	48	0	254
7:15	0	0	0	0	179	0	48	0	18	7	67	0	319
7:30	0	0	0	0	230	0	70	0	21	8	80	0	409
7:45	0	0	0	0	223	0	55	0	29	12	90	0	409
8:00	0	0	0	0	223	0	59	0	31	9	91	0	413
8:15	0	0	0	0	220	0	63	0	24	6	72	0	385
8:30	0	0	0	0	252	0	59	0	22	11	87	0	431
8:45	0	0	0	0	176	0	59	0	46	13	96	0	390
9:00	0	0	0	0	228	0	50	0	22	8	99	0	407
9:15	0	0	0	0	212	0	63	0	35	10	84	0	404
9:30	0	0	0	0	231	0	68	0	24	12	104	0	439
9:45	0	0	0	0	209	0	56	0	30	13	91	0	399

Total Volume:	0	0	0	0	2521	0	700	0	313	116	1009	0	4659
Approach %	0%	0%	0%	0%	100%	0%	69%	0%	31%	10%	90%	0%	

Peak Hr Begin:	9:00												
PHV	0	0	0	0	880	0	237	0	111	43	378	0	1649
PHF	0.000			0.873			0.829			0.966			0.956

Turning Movement Count Report PM

Location ID: 1a
 North/South: Vine St
 East/West: Franklin Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	0	0	0	0	152	0	81	0	58	8	137	0	436
15:15	0	0	0	0	144	0	100	0	61	9	127	0	441
15:30	0	0	0	0	142	0	95	0	71	9	144	0	461
15:45	0	0	0	0	129	0	89	0	83	14	124	0	439
16:00	0	0	0	0	164	0	86	0	79	16	148	0	493
16:15	0	0	0	0	140	0	109	0	116	9	125	0	499
16:30	0	0	0	0	169	0	81	0	80	11	133	0	474
16:45	0	0	0	0	148	1	88	0	90	11	138	0	476
17:00	0	0	0	0	142	0	86	0	103	16	125	0	472
17:15	0	0	0	0	143	0	84	0	125	16	128	0	496
17:30	0	0	0	0	149	0	95	0	139	14	127	0	524
17:45	0	0	0	0	165	0	70	0	87	14	103	0	439

Total Volume:	0	0	0	0	1787	1	1064	0	1092	147	1559	0	5650
Approach %	0%	0%	0%	0%	100%	0%	49%	0%	51%	9%	91%	0%	

Peak Hr Begin:	16:45												
PHV	0	0	0	0	582	1	353	0	457	57	518	0	1968
PHF	0.000			0.862			0.900			0.965			0.986

Pedestrian/Bicycle Count Report

Leg:	North		East		South		West	
	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	0	0	0	2	0	0	0	1
7:15	0	0	0	0	0	0	2	0
7:30	0	0	0	1	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	2	0	0	2	1
8:15	0	0	0	0	0	0	2	0
8:30	0	0	0	0	0	0	2	0
8:45	0	0	0	0	1	0	6	1
9:00	0	0	0	0	1	0	3	0
9:15	0	0	0	2	1	0	1	2
9:30	0	0	0	0	0	1	0	0
9:45	0	0	0	2	2	0	2	0

Leg:	North		East		South		West	
	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	0	0	0	3	0	2	1
15:15	0	0	0	0	1	0	1	2
15:30	0	0	0	0	1	0	2	0
15:45	0	0	0	0	1	0	1	1
16:00	0	0	0	0	2	0	2	0
16:15	0	0	0	0	2	0	2	0
16:30	0	0	0	1	1	1	7	1
16:45	0	0	0	2	1	2	3	2
17:00	0	0	0	2	0	0	4	1
17:15	0	0	0	5	0	3	8	0
17:30	0	0	0	2	1	0	2	0
17:45	0	0	0	0	5	0	2	0

Turning Movement Count Report AM

Location ID: 1b
 North/South: Vine St
 East/West: US-101 SB Off-ramp

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	0	0	0	0	0	0	0	0	291	58	0	349
7:15	0	0	0	0	0	0	0	0	0	309	58	0	367
7:30	0	0	0	0	0	0	0	0	0	354	29	0	383
7:45	0	0	0	0	0	0	0	0	0	353	32	0	385
8:00	0	0	0	0	0	0	0	0	0	353	27	0	380
8:15	0	0	0	0	0	0	0	0	0	374	22	0	396
8:30	0	0	0	0	0	0	0	0	0	328	40	0	368
8:45	0	0	0	0	0	0	0	0	0	347	33	0	380
9:00	0	0	0	0	0	0	0	0	0	371	32	0	403
9:15	0	0	0	0	0	0	0	0	0	349	29	0	378
9:30	0	0	0	0	0	0	0	0	0	342	43	0	385
9:45	0	0	0	0	0	0	0	0	0	329	36	0	365

Total Volume:	0	0	0	0	0	0	0	0	0	4100	439	0	4539
Approach %	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	10%	0%	

Peak Hr Begin:	8:15												
PHV	0	0	0	0	0	0	0	0	0	1420	127	0	1547
PHF	0.000			0.000			0.000			0.960			0.960

Turning Movement Count Report PM

Location ID: 1b
 North/South: Vine St
 East/West: US-101 SB Off-ramp

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	0	0	0	0	0	0	0	0	0	154	43	0	197
15:15	0	0	0	0	0	0	0	0	0	179	44	0	223
15:30	0	0	0	0	0	0	0	0	0	164	60	0	224
15:45	0	0	0	0	0	0	0	0	0	164	59	0	223
16:00	0	0	0	0	0	0	0	0	0	160	59	0	219
16:15	0	0	0	0	0	0	0	0	0	179	47	0	226
16:30	0	0	0	0	0	0	0	0	0	170	55	0	225
16:45	0	0	0	0	0	0	0	0	0	153	67	0	220
17:00	0	0	0	0	0	0	0	0	0	194	62	0	256
17:15	0	0	0	0	0	0	0	0	0	201	63	0	264
17:30	0	0	0	0	0	0	0	0	0	225	88	0	313
17:45	0	0	0	0	0	0	0	0	0	215	72	0	287

Total Volume:	0	0	0	0	0	0	0	0	0	2158	719	0	2877
Approach %	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	25%	0%	

Peak Hr Begin:	17:00												
PHV	0	0	0	0	0	0	0	0	0	835	285	0	1120
PHF	0.000			0.000			0.000			0.895			0.895

Turning Movement Count Report AM

Location ID: 3a
 North/South: Argyle Ave
 East/West: Franklin Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	2	14	6	1	140	19	6	2	1	12	108	3	441
7:15	4	23	5	3	157	26	4	1	6	15	106	4	485
7:30	1	28	12	2	231	35	11	2	6	14	113	2	601
7:45	3	25	14	3	225	36	9	9	4	11	103	9	665
8:00	6	27	22	5	211	38	12	7	3	24	110	3	640
8:15	1	32	8	3	223	24	10	4	7	20	91	2	665
8:30	7	31	23	2	233	28	5	6	7	27	106	4	687
8:45	1	25	18	7	173	45	8	4	4	30	114	3	678
9:00	4	24	16	3	202	38	14	3	14	35	93	4	631
9:15	6	23	21	6	209	39	11	0	8	25	102	3	657
9:30	6	27	8	5	205	45	7	8	5	27	125	6	635
9:45	4	34	9	2	209	42	11	1	4	27	116	6	674

Total Volume:	45	313	162	42	2418	415	108	47	69	267	1287	49	5222
Approach %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

Peak Hr Begin:	8:00												
PHV	15	115	71	17	840	135	35	21	21	101	421	12	1804
PHF	0.000			0.000			0.000			0.000			0.000

Turning Movement Count Report PM

Location ID: 3a
 North/South: Argyle Ave
 East/West: Franklin Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	5	25	13	2	145	25	29	10	8	7	191	9	689
15:15	1	23	13	3	147	32	17	16	7	13	199	5	702
15:30	7	19	15	1	120	23	27	5	11	13	224	8	727
15:45	9	25	8	1	117	26	25	15	7	22	206	3	715
16:00	0	20	11	5	135	23	20	11	11	8	228	4	708
16:15	4	14	13	3	145	31	22	7	7	21	218	7	744
16:30	5	21	16	2	147	22	29	14	10	10	210	6	724
16:45	3	20	14	2	146	24	25	14	9	18	219	4	731
17:00	2	20	14	3	139	24	33	8	8	13	218	5	737
17:15	1	15	11	2	118	25	23	10	17	11	206	4	750
17:30	3	17	8	4	143	26	52	7	14	19	241	6	821
17:45	4	22	7	2	151	27	30	17	15	24	167	5	702

Total Volume:	44	241	143	30	1653	308	332	134	124	179	2527	66	5781
Approach %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

Peak Hr Begin:	16:45												
PHV	9	72	47	11	546	99	133	39	48	61	884	19	1968
PHF	0.000			0.000			0.000			0.000			0.000

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	1	0	15	0	1	0	2	0
7:15	0	0	9	0	1	0	0	0
7:30	1	0	10	0	1	0	0	0
7:45	0	0	18	0	10	1	0	0
8:00	1	1	10	1	7	0	0	0
8:15	0	0	19	0	6	0	0	0
8:30	0	1	8	1	4	0	0	0
8:45	0	0	14	2	1	0	0	1
9:00	0	0	18	0	7	0	0	0
9:15	0	0	6	1	4	0	0	2
9:30	0	1	9	2	2	0	0	1
9:45	0	0	13	0	5	0	0	1

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	0	17	0	6	0	0	3
15:15	1	0	19	0	6	0	0	1
15:30	0	0	15	1	2	0	0	2
15:45	1	0	24	0	3	0	0	1
16:00	0	0	20	0	6	0	0	0
16:15	0	0	14	0	5	0	0	0
16:30	0	0	12	1	9	0	0	3
16:45	0	0	17	0	6	0	0	2
17:00	1	0	35	2	3	0	0	2
17:15	0	0	9	2	3	0	0	0
17:30	1	0	20	1	5	1	0	0
17:45	1	0	25	1	8	0	0	0

Location ID: 3b
 North/South: Argyle Ave
 East/West: Franklin Ave/US-101 NB Ramps

Date: 5/12/15
 City: Hollywood, CA

Turns onto US-101 NB Ramps AM

	<i>Southbound</i>	<i>Westbound</i>	<i>Northbound</i>	<i>Eastbound</i>	
	1	4	7	10	
Movements:	R	T	L	U-Turn	Totals:
7:00	5	103	19	44	171
7:15	3	105	23	39	170
7:30	15	104	25	56	200
7:45	8	178	28	42	256
8:00	12	121	39	45	217
8:15	11	179	50	37	277
8:30	12	137	59	56	264
8:45	15	196	35	34	280
9:00	13	126	42	38	219
9:15	10	154	40	54	258
9:30	13	113	35	51	212
9:45	7	174	28	47	256

Total Volume:	124	1690	423	543	2780
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Peak Hr Begin:	8:00				
PHV	50	633	183	172	1038

Turns onto US-101 NB Ramps PM

	<i>Southbound</i>	<i>Westbound</i>	<i>Northbound</i>	<i>Eastbound</i>	
	1	4	7	10	
Movements:	R	T	L	U-Turn	Totals:
15:00	10	136	74	61	281
15:15	11	154	61	46	272
15:30	11	173	70	46	300
15:45	9	170	72	50	301
16:00	15	137	82	47	281
16:15	8	169	75	48	300
16:30	9	132	91	46	278
16:45	4	146	83	39	272
17:00	3	166	81	45	295
17:15	9	169	129	38	345
17:30	13	177	91	42	323
17:45	6	128	97	40	271

Total Volume:	108	1857	1006	548	3519
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Peak Hr Begin:	16:45				
PHV	29	658	384	164	1235

Turning Movement Count Report AM

Location ID: 4
 North/South: Gower St
 East/West: Franklin Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	7	13	2	0	203	30	26	4	31	10	105	0	431
7:15	7	10	3	3	238	47	67	11	45	7	125	0	563
7:30	8	25	12	2	303	53	84	6	47	5	115	1	661
7:45	8	24	5	3	320	55	82	5	64	8	129	1	704
8:00	15	30	8	3	266	57	87	12	69	7	128	0	682
8:15	16	29	3	1	327	45	60	7	71	7	86	3	655
8:30	10	29	6	0	319	53	71	10	59	19	120	3	699
8:45	16	42	4	2	308	48	65	14	57	9	127	1	693
9:00	14	42	6	1	298	55	67	20	64	14	123	2	706
9:15	10	30	2	2	304	38	72	15	70	15	109	3	670
9:30	12	37	7	2	310	33	42	15	59	12	118	6	653
9:45	10	25	4	5	304	35	64	15	48	9	132	3	654

Total Volume:	133	336	62	24	3500	549	787	134	684	122	1417	23	7771
Approach %	25%	63%	12%	1%	86%	13%	49%	8%	43%	8%	91%	1%	

Peak Hr Begin:	8:30												
PHV	50	143	18	5	1229	194	275	59	250	57	479	9	2768
PHF	0.851			0.960			0.930			0.960			0.980

Turning Movement Count Report PM

Location ID: 4
 North/South: Gower St
 East/West: Franklin Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	5	12	6	0	238	43	103	27	77	7	205	4	727
15:15	8	15	4	1	237	35	123	27	91	10	229	3	783
15:30	5	19	6	0	228	37	102	25	100	14	221	7	764
15:45	11	27	2	3	232	36	114	29	65	11	220	5	755
16:00	7	21	5	2	233	34	90	30	99	9	235	3	768
16:15	11	13	5	2	227	30	103	30	89	12	223	11	756
16:30	8	22	9	1	218	25	100	35	93	10	229	3	753
16:45	0	22	4	4	236	32	117	37	89	12	220	5	778
17:00	6	26	5	6	216	20	111	29	99	14	238	1	771
17:15	4	19	5	6	213	30	129	39	111	11	213	6	786
17:30	4	21	6	2	222	26	100	29	97	11	258	3	779
17:45	9	18	7	2	223	41	109	40	101	9	182	4	745

Total Volume:	78	235	64	29	2723	389	1301	377	1111	130	2673	55	9165
Approach %	21%	62%	17%	1%	87%	12%	47%	14%	40%	5%	94%	2%	

Peak Hr Begin:	16:45												
PHV	14	88	20	18	887	108	457	134	396	48	929	15	3114
PHF	0.824			0.931			0.884			0.912			0.990

Pedestrian/Bicycle Count Report

Leg:	North		East		South		West	
	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	3	0	3	0	2	0	0	1
7:15	6	0	3	1	1	0	0	0
7:30	10	0	3	0	2	0	0	0
7:45	9	0	4	0	2	0	0	0
8:00	10	0	12	0	4	0	0	0
8:15	10	1	9	0	3	0	0	0
8:30	0	2	5	2	0	0	0	1
8:45	9	0	5	1	1	0	0	1
9:00	9	0	8	0	1	0	0	0
9:15	8	0	4	2	2	0	3	3
9:30	4	1	5	1	3	0	0	1
9:45	9	1	8	2	3	0	0	0

Leg:	North		East		South		West	
	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	8	1	5	0	7	0	3	1
15:15	16	1	10	1	4	1	0	2
15:30	17	0	9	0	8	0	0	0
15:45	8	0	6	0	1	0	0	1
16:00	6	0	4	1	0	1	0	0
16:15	15	0	15	0	3	1	0	0
16:30	5	0	10	0	1	1	0	3
16:45	5	0	5	1	1	0	0	0
17:00	10	0	11	0	4	1	0	2
17:15	5	3	7	2	1	0	0	0
17:30	12	0	19	0	1	1	1	0
17:45	11	1	5	2	1	0	0	0

Location ID: 8
 North/South: Ivar Ave
 East/West: Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	2	0	0	1	9	8	3	0	1	8	14	2	48
7:15	2	3	0	1	11	12	1	1	4	4	12	0	51
7:30	2	1	0	1	22	19	4	1	1	8	14	1	74
7:45	3	0	1	6	47	42	1	1	5	10	11	1	128
8:00	5	1	2	6	48	60	9	0	3	7	16	5	162
8:15	4	1	0	3	33	58	12	0	6	8	12	2	139
8:30	3	1	1	1	41	73	8	1	13	12	17	1	172
8:45	2	1	0	3	58	89	18	0	3	10	9	1	194
9:00	1	5	1	2	45	78	6	1	6	13	16	3	177
9:15	2	3	0	4	28	84	10	1	6	12	20	3	173
9:30	1	0	3	2	35	48	11	2	5	9	16	2	134
9:45	0	0	1	5	35	60	10	1	11	9	18	3	153
Total Volume:	27	16	9	35	412	631	93	9	64	110	175	24	1605
Approach %	52%	31%	17%	3%	38%	59%	56%	5%	39%	36%	57%	8%	

Peak Hr Begin:	8:30												
PHV	8	10	2	10	172	324	42	3	28	47	62	8	716
PHF	0.714			0.843			0.830			0.836			0.923

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	2	1	1	2	27	13	14	1	17	6	28	1	113
15:15	1	0	1	4	39	7	25	4	23	6	21	2	133
15:30	2	0	1	3	55	4	21	2	15	13	31	4	151
15:45	0	0	0	3	40	8	23	6	19	8	27	2	136
16:00	0	0	0	2	65	5	27	6	24	14	21	1	165
16:15	1	3	0	1	61	7	28	5	29	5	23	2	165
16:30	1	1	0	7	48	6	16	3	25	5	22	1	135
16:45	1	2	0	0	63	3	22	0	32	10	24	2	159
17:00	1	0	0	5	65	12	24	5	32	9	27	2	182
17:15	0	0	0	3	59	10	21	3	34	11	26	3	170
17:30	1	0	1	3	67	8	30	2	39	6	34	4	195
17:45	1	1	0	5	82	12	33	4	30	9	34	1	212
Total Volume:	11	8	4	38	671	95	284	41	319	102	318	25	1916
Approach %	48%	35%	17%	5%	83%	12%	44%	6%	50%	23%	71%	6%	

Peak Hr Begin:	17:00												
PHV	3	1	1	16	273	42	108	14	135	35	121	10	759
PHF	0.625			0.836			0.905			0.943			0.895

<i>Pedestrians</i>				
Leg:	North	East	South	West
7:00	4	2	9	0
7:15	5	1	3	0
7:30	7	2	8	1
7:45	8	2	10	1
8:00	9	1	12	0
8:15	11	6	11	0
8:30	21	4	13	2
8:45	57	18	28	2
9:00	9	6	13	2
9:15	7	2	10	1
9:30	8	2	3	0
9:45	17	5	19	0

<i>Bicycle</i>				
Leg:	North	East	South	West
7:00	0	0	0	0
7:15	0	0	1	0
7:30	0	0	0	0
7:45	0	0	0	1
8:00	0	0	0	0
8:15	0	0	0	0
8:30	0	2	1	1
8:45	1	0	0	1
9:00	0	0	1	1
9:15	0	0	0	0
9:30	0	1	0	0
9:45	0	1	0	0

<i>Pedestrians</i>				
Leg:	North	East	South	West
16:00	27	1	21	1
16:15	39	7	21	5
16:30	20	5	10	4
16:45	42	6	20	14
17:00	28	1	18	4
17:15	25	2	15	8
17:30	24	5	14	7
17:45	51	15	28	6
18:00	24	1	14	3
18:15	38	2	24	10
18:30	18	3	17	14
18:45	35	6	19	6

<i>Bicycle</i>				
Leg:	North	East	South	West
16:00	0	0	0	1
16:15	0	1	0	0
16:30	0	0	0	2
16:45	1	2	0	2
17:00	0	0	0	1
17:15	0	0	0	1
17:30	0	1	0	1
17:45	3	0	0	1
18:00	0	0	0	1
18:15	0	0	0	1
18:30	0	1	0	1
18:45	0	0	0	1

Turning Movement Count Report AM

Location ID: 5
 North/South: Vine St
 East/West: Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	4	278	4	1	6	12	13	57	7	11	6	1	400
7:15	8	303	7	0	10	11	16	68	4	8	4	0	439
7:30	20	316	14	0	20	26	16	87	7	5	11	3	525
7:45	61	302	5	0	23	13	21	81	11	5	5	1	528
8:00	74	275	9	0	20	23	34	88	13	11	13	3	563
8:15	56	294	18	1	34	19	38	80	7	8	13	1	569
8:30	78	228	34	1	28	18	31	81	19	10	16	0	544
8:45	98	240	15	4	48	24	40	97	14	3	14	2	599
9:00	81	274	18	1	26	19	35	76	17	12	14	0	573
9:15	74	257	31	1	30	15	37	89	15	12	15	3	579
9:30	60	259	15	0	24	21	24	85	9	12	12	5	526
9:45	60	263	20	0	25	23	17	72	18	11	16	3	528

Total Volume:	674	3289	190	9	294	224	322	961	141	108	139	22	6373
Approach %	16%	79%	5%	2%	56%	43%	23%	67%	10%	40%	52%	8%	

Peak Hr Begin:	8:30												
PHV	331	999	98	7	132	76	143	343	65	37	59	5	2295
PHF	0.957			0.707			0.912			0.842			0.958

Turning Movement Count Report PM

Location ID: 5
 North/South: Vine St
 East/West: Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	4	143	4	2	14	8	48	140	22	20	21	1	427
15:15	9	160	10	2	21	15	51	139	27	11	28	10	483
15:30	9	164	7	1	15	16	40	151	35	13	33	11	495
15:45	4	154	12	2	21	12	46	148	33	13	27	12	484
16:00	9	164	7	4	11	12	45	167	52	12	29	10	522
16:15	4	172	8	0	19	15	47	201	45	14	26	15	566
16:30	5	169	8	5	21	12	55	156	36	9	19	9	504
16:45	8	149	4	2	23	11	45	159	44	15	36	10	506
17:00	10	198	5	2	13	10	48	170	52	4	33	11	556
17:15	10	191	13	3	20	9	50	211	40	12	32	12	603
17:30	8	208	10	1	20	15	51	193	53	17	34	15	625
17:45	14	211	10	5	23	17	62	163	61	13	36	12	627

Total Volume:	94	2083	98	29	221	152	588	1998	500	153	354	128	6398
Approach %	4%	92%	4%	7%	55%	38%	19%	65%	16%	24%	56%	20%	

Peak Hr Begin:	17:00												
PHV	42	808	38	11	76	51	211	737	206	46	135	50	2411
PHF	0.945			0.767			0.958			0.875			0.961

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	2	0	3	0	0	0	2	0
7:15	2	0	4	0	0	0	8	0
7:30	3	0	0	0	1	1	6	0
7:45	10	0	6	1	2	0	11	1
8:00	3	0	6	1	6	0	20	0
8:15	2	0	5	0	5	0	17	0
8:30	0	0	4	2	2	1	33	0
8:45	4	0	2	2	2	0	156	0
9:00	6	0	6	0	2	0	9	0
9:15	1	0	3	0	1	0	5	0
9:30	3	0	7	1	1	1	8	0
9:45	2	0	8	1	8	2	24	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	2	1	3	0	7	0	32	0
15:15	4	0	3	1	6	2	92	0
15:30	3	0	2	1	3	1	35	1
15:45	8	0	4	1	4	2	59	0
16:00	9	0	10	0	3	0	36	1
16:15	3	0	12	0	5	1	60	3
16:30	5	0	9	0	6	1	38	1
16:45	6	0	1	0	4	0	125	2
17:00	3	0	5	0	2	0	28	0
17:15	6	0	7	1	4	1	80	0
17:30	2	0	15	0	3	0	22	1
17:45	6	0	11	0	7	0	43	3

Turning Movement Count Report AM

Location ID: 6
 North/South: Argyle Ave
 East/West: Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	17	1	2	3	1	1	25	1	7	0	9	67
7:15	0	31	1	10	6	3	1	26	1	13	4	16	112
7:30	0	28	0	6	10	1	1	22	5	14	3	18	108
7:45	0	36	0	8	15	2	0	32	1	7	2	20	123
8:00	1	40	3	5	20	4	1	32	7	20	2	32	167
8:15	0	31	0	5	31	7	0	38	2	22	4	43	183
8:30	1	47	1	12	29	4	1	36	2	28	3	36	200
8:45	0	51	0	7	49	8	3	25	3	26	7	42	221
9:00	0	64	1	8	26	12	0	39	3	26	2	31	212
9:15	0	40	1	8	30	14	1	40	1	36	10	31	212
9:30	2	49	1	10	16	11	1	32	1	14	5	30	172
9:45	0	45	0	8	17	13	1	38	6	21	5	21	175

Total Volume:	4	479	9	89	252	80	11	385	33	234	47	329	1952
Approach %	1%	97%	2%	21%	60%	19%	3%	90%	8%	38%	8%	54%	

Peak Hr Begin:	8:30												
PHV	1	202	3	35	134	38	5	140	9	116	22	140	845
PHF	0.792			0.809			0.917			0.903			0.956

Turning Movement Count Report PM

Location ID: 6
 North/South: Argyle Ave
 East/West: Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	0	27	2	11	8	2	2	87	4	12	9	57	221
15:15	1	31	1	3	8	1	2	67	6	13	9	55	197
15:30	2	27	1	8	8	1	2	73	2	20	17	54	215
15:45	1	26	2	6	13	1	4	86	3	20	13	59	234
16:00	1	25	0	12	11	2	3	73	5	19	13	54	218
16:15	1	20	2	10	10	2	4	70	4	11	14	60	208
16:30	0	22	2	5	18	2	4	86	7	13	12	59	230
16:45	0	36	3	17	11	4	5	103	7	8	18	47	259
17:00	0	27	1	19	8	2	4	92	5	10	13	62	243
17:15	0	24	1	25	16	1	7	107	4	22	23	60	290
17:30	0	21	3	13	12	4	3	113	8	16	19	60	272
17:45	1	37	4	18	18	1	4	112	6	14	29	59	303

Total Volume:	7	323	22	147	141	23	44	1069	61	178	189	686	2890
Approach %	2%	92%	6%	47%	45%	7%	4%	91%	5%	17%	18%	65%	

Peak Hr Begin:	17:00												
PHV	1	109	9	75	54	8	18	424	23	62	84	241	1108
PHF	0.708			0.815			0.938			0.921			0.914

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	1	0	11	0	1	0	2	0
7:15	3	0	9	0	3	0	4	0
7:30	0	0	13	0	1	0	0	0
7:45	1	0	12	0	3	0	1	0
8:00	1	1	8	0	5	0	1	0
8:15	3	1	15	0	4	0	5	0
8:30	1	1	4	1	2	0	1	0
8:45	4	0	12	0	3	0	2	0
9:00	2	0	14	0	2	0	2	0
9:15	1	0	8	0	1	0	0	0
9:30	3	0	7	0	6	0	3	0
9:45	2	0	13	0	6	0	1	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	5	0	11	1	8	0	4	0
15:15	5	0	14	1	11	0	5	0
15:30	3	1	25	1	6	1	5	0
15:45	12	0	15	0	7	0	4	0
16:00	0	0	14	0	4	0	3	0
16:15	4	0	14	0	3	0	5	3
16:30	5	0	9	0	1	0	2	1
16:45	5	0	16	0	10	1	6	0
17:00	18	1	20	0	9	0	3	2
17:15	8	0	6	0	4	0	6	0
17:30	5	1	17	1	6	1	4	2
17:45	4	0	20	0	3	0	4	1

Turning Movement Count Report AM

Location ID: 7
 North/South: Gower St
 East/West: Carlos Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	1	195	2	3	0	0	0	35	0	1	0	0	237
7:15	1	223	1	5	1	3	3	66	0	1	0	0	304
7:30	3	193	2	3	1	0	2	49	1	5	0	1	260
7:45	4	203	2	7	1	3	4	71	3	2	0	3	303
8:00	6	210	1	9	0	2	5	81	3	1	0	1	319
8:15	3	194	2	5	2	3	2	75	6	5	0	1	298
8:30	10	200	2	7	0	8	3	88	9	3	2	5	337
8:45	12	243	2	6	2	7	4	71	13	11	2	5	378
9:00	19	192	3	11	2	8	4	72	5	13	1	5	335
9:15	5	185	6	7	0	7	5	85	5	9	1	2	317
9:30	5	190	4	3	0	5	3	65	3	10	0	1	289
9:45	3	212	1	6	0	3	5	61	7	3	2	0	303

Total Volume:	72	2440	28	72	9	49	40	819	55	64	8	24	3680
Approach %	3%	96%	1%	55%	7%	38%	4%	90%	6%	67%	8%	25%	

Peak Hr Begin:	8:30												
PHV	46	820	13	31	4	30	16	316	32	36	6	17	1367
PHF	0.855			0.774			0.910			0.776			0.904

Turning Movement Count Report PM

Location ID: 7
 North/South: Gower St
 East/West: Carlos Ave

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	2	128	3	7	0	2	4	124	2	7	0	2	281
15:15	1	137	2	6	0	4	6	137	2	2	0	1	298
15:30	6	131	2	5	0	5	7	129	5	5	0	0	295
15:45	3	134	2	7	0	5	5	130	3	0	0	2	291
16:00	6	131	4	4	1	6	2	141	7	6	0	4	312
16:15	5	114	4	4	1	4	4	140	10	7	1	1	295
16:30	4	116	1	9	2	6	9	178	8	8	0	5	346
16:45	5	104	5	8	1	2	11	141	5	9	3	1	295
17:00	7	134	3	10	1	2	2	196	5	8	0	6	374
17:15	6	141	4	18	0	5	6	182	4	6	0	3	375
17:30	3	130	3	14	0	2	2	173	2	8	0	2	339
17:45	7	120	6	14	1	2	3	184	8	8	0	1	354

Total Volume:	55	1520	39	106	7	45	61	1855	61	74	4	28	3855
Approach %	3%	94%	2%	67%	4%	28%	3%	94%	3%	70%	4%	26%	

Peak Hr Begin:	17:00												
PHV	23	525	16	56	2	11	13	735	19	30	0	12	1442
PHF	0.934			0.750			0.945			0.750			0.961

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	1	0	6	0	1	0	0	0
7:15	1	1	9	0	1	0	2	0
7:30	0	0	11	0	0	0	2	0
7:45	3	0	15	0	0	0	2	0
8:00	2	0	8	1	2	0	1	0
8:15	0	0	4	1	0	0	1	0
8:30	0	2	9	1	5	0	3	0
8:45	2	0	8	0	6	0	0	0
9:00	1	1	3	1	0	0	6	0
9:15	0	0	2	0	4	0	1	0
9:30	1	2	6	0	0	0	2	0
9:45	2	1	3	0	2	0	2	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	1	6	0	0	0	4	0
15:15	0	1	5	0	4	1	13	0
15:30	6	1	12	0	3	0	9	1
15:45	1	0	7	0	7	0	5	0
16:00	5	0	8	0	3	0	1	1
16:15	5	2	10	0	2	0	8	0
16:30	1	0	7	0	2	0	2	0
16:45	3	1	7	0	5	0	4	0
17:00	3	0	12	0	5	0	10	0
17:15	2	4	12	0	6	0	10	1
17:30	1	0	11	0	3	0	2	0
17:45	3	0	9	0	1	0	7	0



City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Ivar Ave

East/West Hollywood Blvd

Day: Tuesday **Date:** May 10, 2016 **Weather:** SUNNY

Hours: 7-10 & 3-6 **Chekr:** NDS

School Day: YES **District:** **I/S CODE**

	N/B	S/B	E/B	W/B
DUAL-WHEELED	18	28	133	154
BIKES	12	21	55	84
BUSES	2	0	121	97

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
<i>AM PK 15 MIN</i>	39	9.45	118	9.00	153	9.30	318	8.00
<i>PM PK 15 MIN</i>	97	16.45	28	17.00	235	15.45	245	16.00
<i>AM PK HOUR</i>	113	8.30	409	8.30	571	8.00	1190	8.00
<i>PM PK HOUR</i>	371	16.45	107	16.30	901	15.00	910	16.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	10	14	27	51
8-9	15	45	51	111
9-10	12	47	51	110
15-16	44	136	100	280
16-17	26	161	120	307
17-18	47	187	131	365
TOTAL	154	590	480	1224

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	9	68	28	105
8-9	12	271	54	337
9-10	15	289	61	365
15-16	19	51	18	88
16-17	19	55	20	94
17-18	13	58	23	94
TOTAL	87	792	204	1083

TOTAL

N-S
156
448
475
368
401
459
2307

XING S/L

Ped	Sch
96	6
173	6
231	11
492	29
561	20
374	11
1927	83

XING N/L

Ped	Sch
57	1
119	1
217	1
316	7
316	0
513	0
1538	10

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	6	375	10	391
8-9	20	532	19	571
9-10	17	505	24	546
15-16	39	826	36	901
16-17	21	781	37	839
17-18	45	798	33	876
18-19	0	2	1	3
TOTAL	148	3819	160	4127

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	38	898	21	957
8-9	75	1071	44	1190
9-10	72	962	46	1080
15-16	77	740	28	845
16-17	94	771	45	910
17-18	91	713	47	851
18-19	0	4	0	4
TOTAL	447	5159	231	5837

TOTAL

E-W
1348
1761
1626
1746
1749
1727
7
9964

XING W/L

Ped	Sch
5	0
18	0
26	0
48	0
73	3
72	0
0	0
242	3

XING E/L

Ped	Sch
11	1
21	0
36	0
41	1
44	0
47	0
0	0
200	2

ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

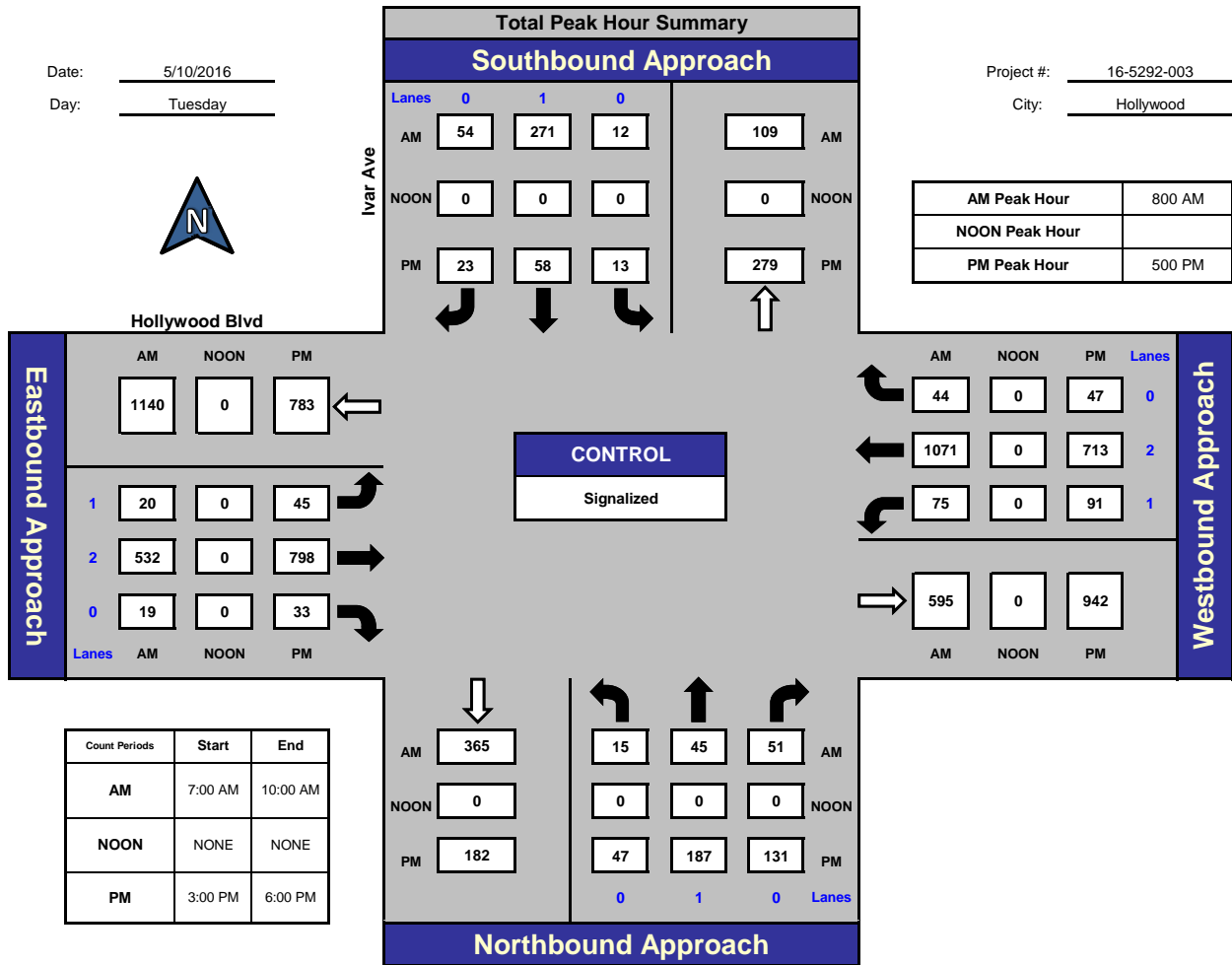
Ivar Ave and Hollywood Blvd, Hollywood

Date: 5/10/2016

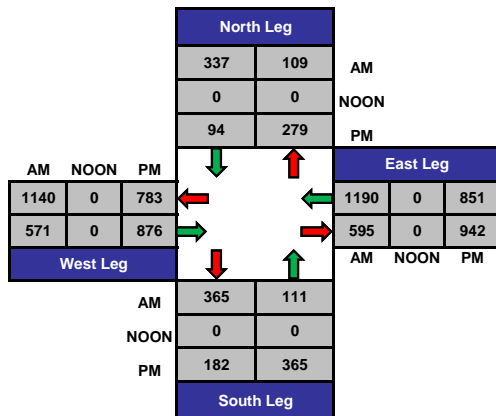
Day: Tuesday

Project #: 16-5292-003

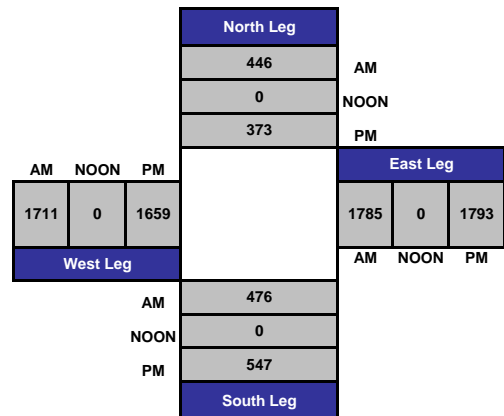
City: Hollywood



Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-003

Day: Tuesday

City: Hollywood

TOTALS

Date: 5/10/2016

NS/EW Streets:		AM												
		Ivar Ave			Ivar Ave			Hollywood Blvd			Hollywood Blvd			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM		3	3	10	3	12	2	1	72	0	9	173	5	293
7:15 AM		1	2	6	4	13	4	2	69	0	7	195	3	306
7:30 AM		4	4	2	1	14	9	1	120	3	11	259	5	433
7:45 AM		2	5	9	1	29	13	2	114	7	11	271	8	472
8:00 AM		4	7	13	1	51	14	2	148	1	16	286	16	559
8:15 AM		0	10	14	2	67	14	6	132	4	16	280	8	553
8:30 AM		7	12	11	7	70	14	6	134	6	15	229	13	524
8:45 AM		4	16	13	2	83	12	6	118	8	28	276	7	573
9:00 AM		2	10	13	0	102	16	6	120	6	21	233	18	547
9:15 AM		3	8	14	5	81	17	4	115	7	20	237	12	523
9:30 AM		3	8	10	4	55	15	6	142	5	14	268	9	539
9:45 AM		4	21	14	6	51	13	1	128	6	17	224	7	492
TOTAL VOLUMES :		NL 37	NT 106	NR 129	SL 36	ST 628	SR 143	EL 43	ET 1412	ER 53	WL 185	WT 2931	WR 111	TOTAL 5814
APPROACH %'s :		13.60%	38.97%	47.43%	4.46%	77.82%	17.72%	2.85%	93.63%	3.51%	5.73%	90.83%	3.44%	
PEAK HR START TIME :		800 AM												TOTAL
PEAK HR VOL :		15	45	51	12	271	54	20	532	19	75	1071	44	2209
PEAK HR FACTOR :		0.841			0.869			0.945			0.936			0.964

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-003

Day: Tuesday

City: Hollywood

TOTALS

Date: 5/10/2016

NS/EW Streets:		PM												
		Ivar Ave			Ivar Ave			Hollywood Blvd			Hollywood Blvd			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	
3:00 PM	10	25	25	5	10	7	15	202	12	14	184	8	517	
3:15 PM	6	19	18	2	14	4	9	189	9	18	192	13	493	
3:30 PM	18	43	30	3	14	4	10	210	10	27	187	4	560	
3:45 PM	10	49	27	9	13	3	5	225	5	18	177	3	544	
4:00 PM	3	35	33	3	11	4	5	213	8	24	206	15	560	
4:15 PM	10	36	21	2	17	5	3	186	10	19	176	8	493	
4:30 PM	3	37	32	6	16	4	4	198	7	30	179	16	532	
4:45 PM	10	53	34	8	11	7	9	184	12	21	210	6	565	
5:00 PM	14	48	34	5	17	6	8	193	4	29	156	9	523	
5:15 PM	13	39	42	1	21	5	14	203	6	15	180	14	553	
5:30 PM	11	48	25	5	13	6	13	200	9	24	179	12	545	
5:45 PM	9	52	30	2	7	6	10	202	14	23	198	12	565	
TOTAL VOLUMES :	NL 117	NT 484	NR 351	SL 51	ST 164	SR 61	EL 105	ET 2407	ER 107	WL 262	WT 2228	WR 120	TOTAL 6457	
APPROACH %'s :	12.29%	50.84%	36.87%	18.48%	59.42%	22.10%	4.01%	91.91%	4.09%	10.04%	85.36%	4.60%		
PEAK HR START TIME :	500 PM													TOTAL
PEAK HR VOL :	47	187	131	13	58	23	45	798	33	91	713	47	2186	
PEAK HR FACTOR :	0.951			0.839			0.969			0.913			0.967	

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-5292-003
 N/S Street: Ivar Ave
 E/W Street: Hollywood Blvd
 DATE: 5/10/2016
 CITY: Hollywood

DAY: Tuesday

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	10	3	9	7	0	1	0	0
7:15 AM	9	5	9	13	4	2	0	1
7:30 AM	5	8	14	17	2	0	2	1
7:45 AM	7	10	10	17	0	2	1	0
8:00 AM	14	9	26	17	3	3	5	3
8:15 AM	7	12	12	16	1	1	0	2
8:30 AM	11	23	27	28	4	5	2	3
8:45 AM	31	12	23	24	1	3	1	2
9:00 AM	18	16	23	18	8	0	3	2
9:15 AM	17	21	20	31	7	5	2	5
9:30 AM	10	12	26	39	3	3	4	0
9:45 AM	29	94	24	50	3	7	5	5
TOTALS	168	225	223	277	36	32	25	24

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	1	0	3	1	1	0	0	0
7:30 AM	0	0	1	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0
8:45 AM	1	0	2	3	0	0	0	0
9:00 AM	1	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	2	4	0	0	0	0
9:45 AM	0	0	1	4	0	0	0	0
TOTALS	3	0	10	13	1	0	0	0

P M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	25	33	71	72	6	3	11	2
3:15 PM	36	55	44	62	10	1	6	9
3:30 PM	37	32	55	46	1	9	4	5
3:45 PM	44	54	83	59	6	5	4	7
4:00 PM	47	48	73	66	6	6	16	7
4:15 PM	29	29	78	54	6	0	6	9
4:30 PM	35	36	83	55	6	4	14	6
4:45 PM	47	45	86	66	9	7	11	4
5:00 PM	77	57	51	32	3	3	4	12
5:15 PM	62	69	51	33	4	7	4	11
5:30 PM	77	68	59	34	3	10	10	14
5:45 PM	61	42	65	49	12	5	12	5
TOTALS	577	568	799	628	72	60	102	91

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	3	5	9	1	0	0	0
3:15 PM	2	1	1	3	0	0	0	0
3:30 PM	0	0	0	2	0	0	0	0
3:45 PM	1	0	4	5	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	6	0	0	2	0
4:45 PM	0	0	2	12	0	0	1	0
5:00 PM	0	0	3	0	0	0	0	0
5:15 PM	0	0	1	4	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0
TOTALS	3	4	19	41	1	0	3	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-003

Day: Tuesday

City: Hollywood

BIKES

Date: 5/10/2016

AM

NS/EW Streets:		Ivar Ave			Ivar Ave			Hollywood Blvd			Hollywood Blvd			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM		0	0	0	0	0	0	0	0	0	0	1	0	1
7:15 AM		0	0	0	0	0	0	0	0	0	0	2	0	2
7:30 AM		0	0	0	2	0	0	0	1	0	0	5	3	11
7:45 AM		0	0	0	0	0	0	0	1	0	0	1	1	3
8:00 AM		0	0	0	0	0	0	0	0	0	0	3	3	6
8:15 AM		0	0	0	1	1	0	0	1	0	0	2	0	5
8:30 AM		0	0	0	0	1	0	0	0	2	0	1	4	8
8:45 AM		0	1	0	1	0	0	0	0	0	0	5	4	11
9:00 AM		0	0	0	0	2	1	0	1	0	1	3	8	16
9:15 AM		0	2	0	0	0	0	0	0	1	0	1	1	5
9:30 AM		0	0	0	0	0	1	0	2	0	0	1	0	4
9:45 AM		0	0	0	0	0	0	0	3	0	0	2	0	5
TOTAL VOLUMES :		NL 0	NT 3	NR 0	SL 4	ST 4	SR 2	EL 0	ET 9	ER 3	WL 1	WT 27	WR 24	TOTAL 77
APPROACH %'s :		0.00%	100.00%	0.00%	40.00%	40.00%	20.00%	0.00%	75.00%	25.00%	1.92%	51.92%	46.15%	
PEAK HR START TIME :		800 AM												TOTAL
PEAK HR VOL :		0	1	0	2	2	0	0	1	2	0	11	11	30
PEAK HR FACTOR :		0.250			0.500			0.375			0.611			0.682

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-003

Day: Tuesday

City: Hollywood

BIKES

Date: 5/10/2016

PM

NS/EW Streets:		Ivar Ave			Ivar Ave			Hollywood Blvd			Hollywood Blvd			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
3:00 PM		0	0	0	0	0	0	0	0	0	0	2	0	2
3:15 PM		0	0	0	1	0	0	0	2	1	0	2	0	6
3:30 PM		0	0	0	1	0	0	0	6	0	0	0	0	7
3:45 PM		0	0	0	0	0	0	0	0	0	0	4	0	4
4:00 PM		2	0	1	0	1	1	0	3	1	0	2	1	12
4:15 PM		0	0	0	1	0	0	0	2	0	0	1	0	4
4:30 PM		0	0	2	0	2	0	0	3	1	0	6	0	14
4:45 PM		0	0	0	0	0	1	0	5	2	0	4	1	13
5:00 PM		2	0	0	0	0	0	0	4	2	0	1	0	9
5:15 PM		1	0	1	0	1	1	0	2	2	0	3	0	11
5:30 PM		0	0	0	0	0	0	0	5	0	1	1	0	7
5:45 PM		0	0	0	0	0	1	0	0	2	0	3	0	6
TOTAL VOLUMES :		NL 5	NT 0	NR 4	SL 3	ST 4	SR 4	EL 0	ET 32	ER 11	WL 1	WT 29	WR 2	TOTAL 95
APPROACH %'s :		55.56%	0.00%	44.44%	27.27%	36.36%	36.36%	0.00%	74.42%	25.58%	3.13%	90.63%	6.25%	
PEAK HR START TIME :		500 PM												TOTAL
PEAK HR VOL :		3	0	1	0	1	2	0	11	6	1	8	0	33
PEAK HR FACTOR :		0.500			0.375			0.708			0.750			0.750

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

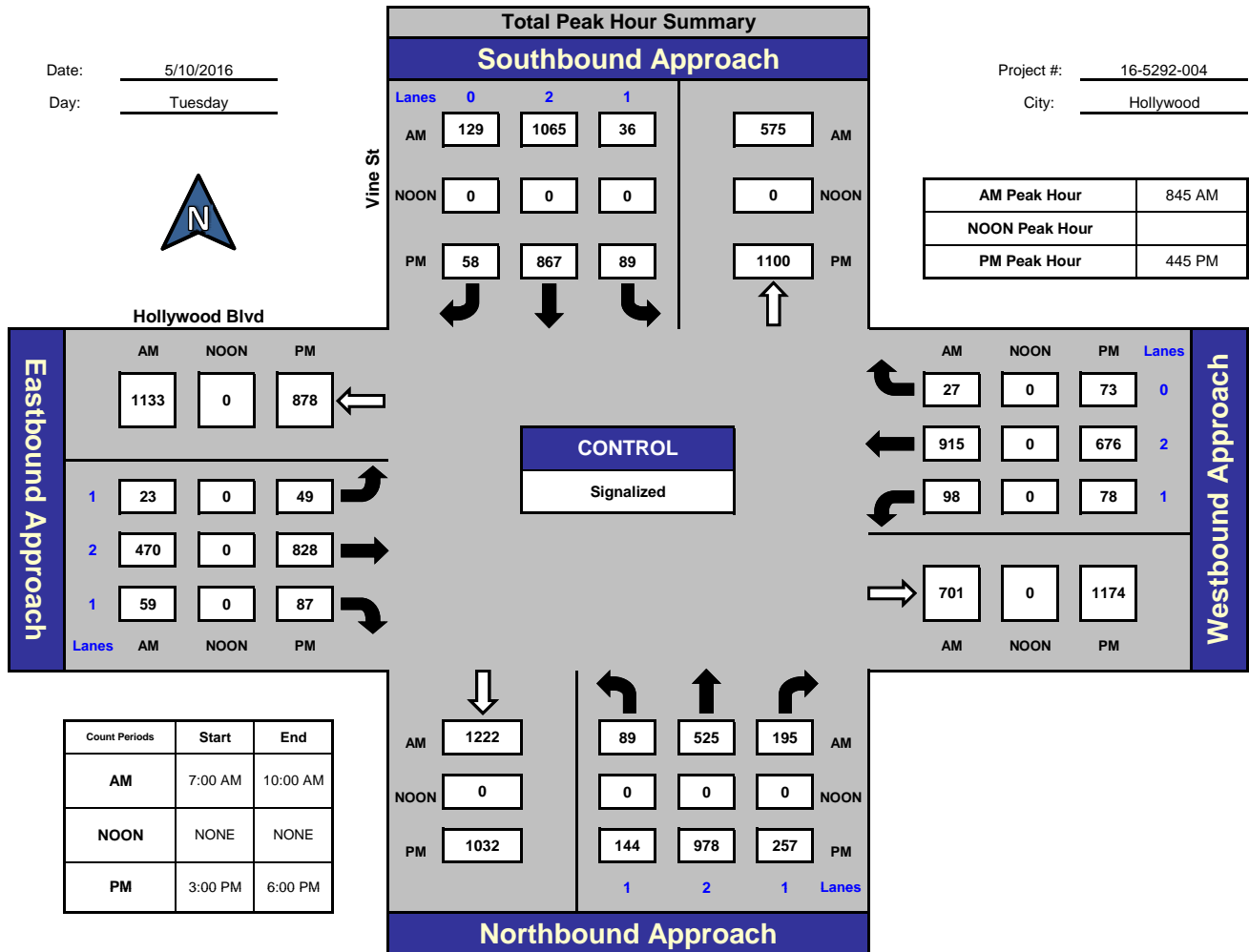
Vine St and Hollywood Blvd, Hollywood

Date: 5/10/2016

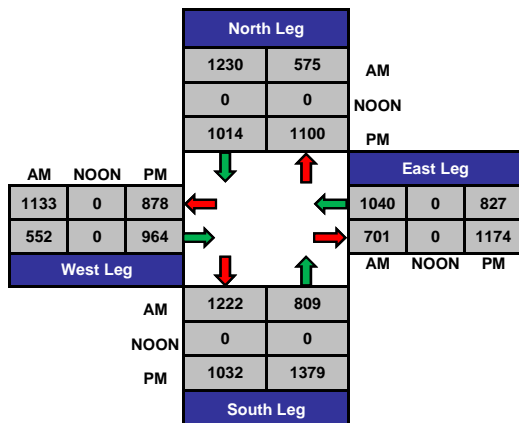
Day: Tuesday

Project #: 16-5292-004

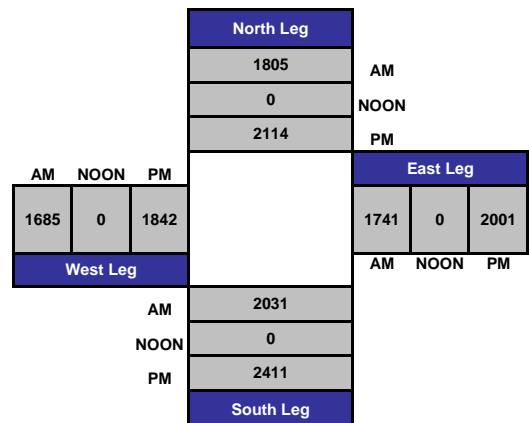
City: Hollywood



Total Ins & Outs



Total Volume Per Leg



Turning Movement Count Report AM

Location ID: 11
 North/South: Argyle Ave
 East/West: Hollywood Blvd

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	14	12	8	7	169	18	8	13	1	16	78	9	353
7:15	10	25	5	2	216	27	9	18	1	13	103	11	440
7:30	7	22	4	5	254	26	5	10	4	16	105	10	468
7:45	12	22	3	5	267	30	4	17	3	23	145	14	545
8:00	5	41	5	13	269	40	7	19	3	25	173	13	613
8:15	21	57	2	5	283	42	9	16	5	24	107	15	586
8:30	11	56	10	10	246	47	6	22	3	16	118	12	557
8:45	13	55	8	5	259	53	10	27	8	30	143	14	625
9:00	17	54	14	13	260	43	10	19	8	25	119	14	596
9:15	12	50	12	8	287	43	7	24	5	38	135	26	647
9:30	8	58	12	12	224	47	15	15	11	25	116	17	560
9:45	8	59	16	19	265	45	8	21	7	35	133	17	633

Total Volume:	138	511	99	104	2999	461	98	221	59	286	1475	172	6623
Approach %	18%	68%	13%	3%	84%	13%	26%	58%	16%	15%	76%	9%	

Peak Hr Begin:	9:00												
PHV	45	221	54	52	1036	178	40	79	31	123	503	74	2436
PHF	0.941			0.936			0.915			0.879			0.941

Turning Movement Count Report PM

Location ID: 11
 North/South: Argyle Ave
 East/West: Hollywood Blvd

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	10	24	6	18	181	18	11	50	7	35	212	12	584
15:15	16	27	10	10	171	13	10	40	13	32	203	22	567
15:30	16	35	10	17	156	15	10	47	13	32	208	31	590
15:45	7	29	7	20	181	18	13	50	9	36	197	17	584
16:00	7	25	8	15	156	12	7	50	9	33	213	25	560
16:15	12	22	10	21	165	16	13	57	16	43	200	32	607
16:30	10	27	5	34	156	13	11	55	3	32	222	16	584
16:45	12	34	11	30	180	19	7	78	8	44	201	28	652
17:00	12	24	10	34	187	11	8	59	5	37	213	32	632
17:15	18	29	11	32	168	17	18	87	15	37	221	35	688
17:30	19	40	7	40	187	20	8	70	8	51	237	23	710
17:45	15	29	8	38	169	19	10	65	9	41	242	19	664

Total Volume:	154	345	103	309	2057	191	126	708	115	453	2569	292	7422
Approach %	26%	57%	17%	12%	80%	7%	13%	75%	12%	14%	78%	9%	

Peak Hr Begin:	17:00												
PHV	64	122	36	144	711	67	44	281	37	166	913	109	2694
PHF	0.841			0.933			0.754			0.955			0.949

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	10	1	0	0	30	4	15	0
7:15	14	0	0	0	22	1	19	1
7:30	24	3	0	0	36	2	17	0
7:45	11	4	0	0	55	2	15	0
8:00	29	7	0	0	65	4	15	0
8:15	35	2	0	0	43	4	13	1
8:30	47	1	0	0	50	1	37	0
8:45	39	3	0	0	61	2	25	1
9:00	40	6	0	0	70	2	19	0
9:15	27	5	0	0	64	1	31	0
9:30	37	3	0	0	54	0	18	0
9:45	47	1	0	0	68	2	28	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	42	1	0	0	89	4	42	1
15:15	55	2	0	0	97	4	26	2
15:30	42	2	0	0	76	2	23	0
15:45	57	5	0	0	93	6	20	1
16:00	40	2	0	0	107	0	27	0
16:15	42	1	0	0	83	0	36	1
16:30	49	5	0	0	129	8	36	0
16:45	46	1	0	0	105	3	27	0
17:00	59	2	0	0	92	2	35	2
17:15	6	3	0	0	112	5	18	1
17:30	71	2	0	0	103	3	51	1
17:45	38	1	0	0	60	4	32	0

Turning Movement Count Report AM

Location ID: 12
 North/South: Gower Street
 East/West: Hollywood Boulevard

Date: 11/10/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	35	143	9	13	148	2	12	43	3	4	66	8	486
7:15	60	127	4	21	189	6	9	49	4	3	76	9	557
7:30	77	148	14	18	218	1	15	65	4	7	88	13	668
7:45	71	147	9	25	204	3	14	45	9	14	120	6	667
8:00	82	142	18	38	191	4	29	76	9	4	113	19	725
8:15	77	152	17	27	225	3	21	69	10	10	112	13	736
8:30	102	144	14	26	214	4	25	83	12	14	126	11	775
8:45	99	147	17	33	222	2	12	67	13	17	112	13	754
9:00	103	141	9	22	204	3	19	61	13	16	120	11	722
9:15	80	129	15	31	194	3	15	68	19	17	111	11	693
9:30	96	142	16	27	207	5	18	65	14	17	121	21	749
9:45	71	144	22	25	196	6	32	58	10	18	99	16	697

Total Volume:	953	1706	164	306	2412	42	221	749	120	141	1264	151	8229
Approach %	34%	60%	6%	11%	87%	2%	20%	69%	11%	9%	81%	10%	

Peak Hr Begin:	8:00												
PHV	360	585	66	124	852	13	87	295	44	45	463	56	2990
PHF	0.961			0.962			0.888			0.934			0.965

Turning Movement Count Report PM

Location ID: 12
 North/South: Gower Street
 East/West: Hollywood Boulevard

Date: 11/10/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	25	93	22	21	149	5	20	101	19	21	183	13	672
15:15	38	116	17	15	155	14	29	116	17	12	189	16	734
15:30	32	102	14	17	150	14	22	130	14	26	224	38	783
15:45	42	110	9	33	171	14	42	116	15	19	160	33	764
16:00	33	100	15	15	146	16	24	135	11	20	159	22	696
16:15	23	128	16	19	162	12	20	136	19	14	206	34	789
16:30	31	121	18	25	157	22	26	144	26	11	176	21	778
16:45	38	140	22	15	184	20	26	149	22	20	168	23	827
17:00	35	119	30	19	187	18	22	164	18	11	213	27	863
17:15	29	116	20	12	165	18	27	178	27	13	208	30	843
17:30	47	121	17	20	205	16	29	140	17	24	189	30	855
17:45	50	100	20	12	185	12	36	150	25	28	152	25	795

Total Volume:	423	1366	220	223	2016	181	323	1659	230	219	2227	312	9399
Approach %	21%	68%	11%	9%	83%	7%	15%	75%	10%	8%	81%	11%	

Peak Hr Begin:	16:45												
PHV	149	496	89	66	741	72	104	631	84	68	778	110	3388
PHF	0.918			0.912			0.883			0.952			0.981

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	11	0	7	0	7	2	4	0
7:15	21	0	8	0	15	0	4	1
7:30	16	0	10	1	20	0	18	0
7:45	17	1	8	1	18	5	6	2
8:00	15	2	9	0	22	0	5	2
8:15	13	1	6	2	21	0	4	0
8:30	11	0	2	0	21	0	5	0
8:45	13	0	11	0	28	1	7	1
9:00	2	0	4	1	28	3	7	0
9:15	25	1	9	0	23	1	11	1
9:30	19	1	7	1	30	0	10	0
9:45	9	1	8	0	18	1	3	1

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	24	1	12	0	25	0	16	2
15:15	28	0	13	0	24	3	12	0
15:30	35	0	21	0	36	1	17	0
15:45	26	2	24	0	27	1	15	0
16:00	29	1	15	1	43	3	16	0
16:15	39	0	12	0	18	0	20	1
16:30	31	2	16	2	39	0	10	0
16:45	39	0	18	0	25	2	13	0
17:00	26	3	12	1	28	3	12	2
17:15	29	0	22	0	27	3	15	0
17:30	27	0	20	0	24	5	18	0
17:45	30	0	11	1	32	2	12	0



City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Ivar Ave

East/West Selma Ave

Day: Tuesday **Date:** May 10, 2016 **Weather:** SUNNY

Hours: 7-10 & 3-6 **Chckrs:** NDS

School Day: YES **District:** **I/S CODE**

	N/B	S/B	E/B	W/B
DUAL-WHEELED	19	22	10	10
BIKES	18	23	27	25
BUSES	0	0	0	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
<i>AM PK 15 MIN</i>	40	8.45	121	9.00	23	8.45	15	9.30
<i>PM PK 15 MIN</i>	95	17.00	53	15.30	59	17.00	28	17.30
<i>AM PK HOUR</i>	128	8.15	412	8.30	80	8.00	43	8.45
<i>PM PK HOUR</i>	347	16.45	201	17.00	195	17.00	80	16.45

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	3	40	4	47
8-9	19	92	5	116
9-10	15	84	9	108
15-16	30	195	20	245
16-17	30	230	21	281
17-18	42	274	26	342
TOTAL	139	915	85	1139

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	3	99	8	110
8-9	6	320	18	344
9-10	3	336	19	358
15-16	13	131	26	170
16-17	18	141	25	184
17-18	12	156	33	201
TOTAL	55	1183	129	1367

TOTAL

N-S
157
460
466
415
465
543
2506

XING S/L

Ped	Sch
34	3
39	2
42	0
102	1
97	1
140	1
454	8

XING N/L

Ped	Sch
8	1
32	0
14	0
41	0
71	1
60	0
226	2

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	2	9	23	34
8-9	14	25	41	80
9-10	18	12	31	61
15-16	33	78	46	157
16-17	31	54	45	130
17-18	51	74	70	195
TOTAL	149	252	256	657

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	5	5	14	24
8-9	11	8	18	37
9-10	7	15	20	42
15-16	13	19	27	59
16-17	13	28	34	75
17-18	15	26	39	80
TOTAL	64	101	152	317

TOTAL

E-W
58
117
103
216
205
275
974

XING W/L

Ped	Sch
7	1
21	0
15	0
49	3
81	2
77	1
250	7

XING E/L

Ped	Sch
11	0
32	0
18	0
58	0
68	0
54	0
241	0

ITM Peak Hour Summary

Prepared by:

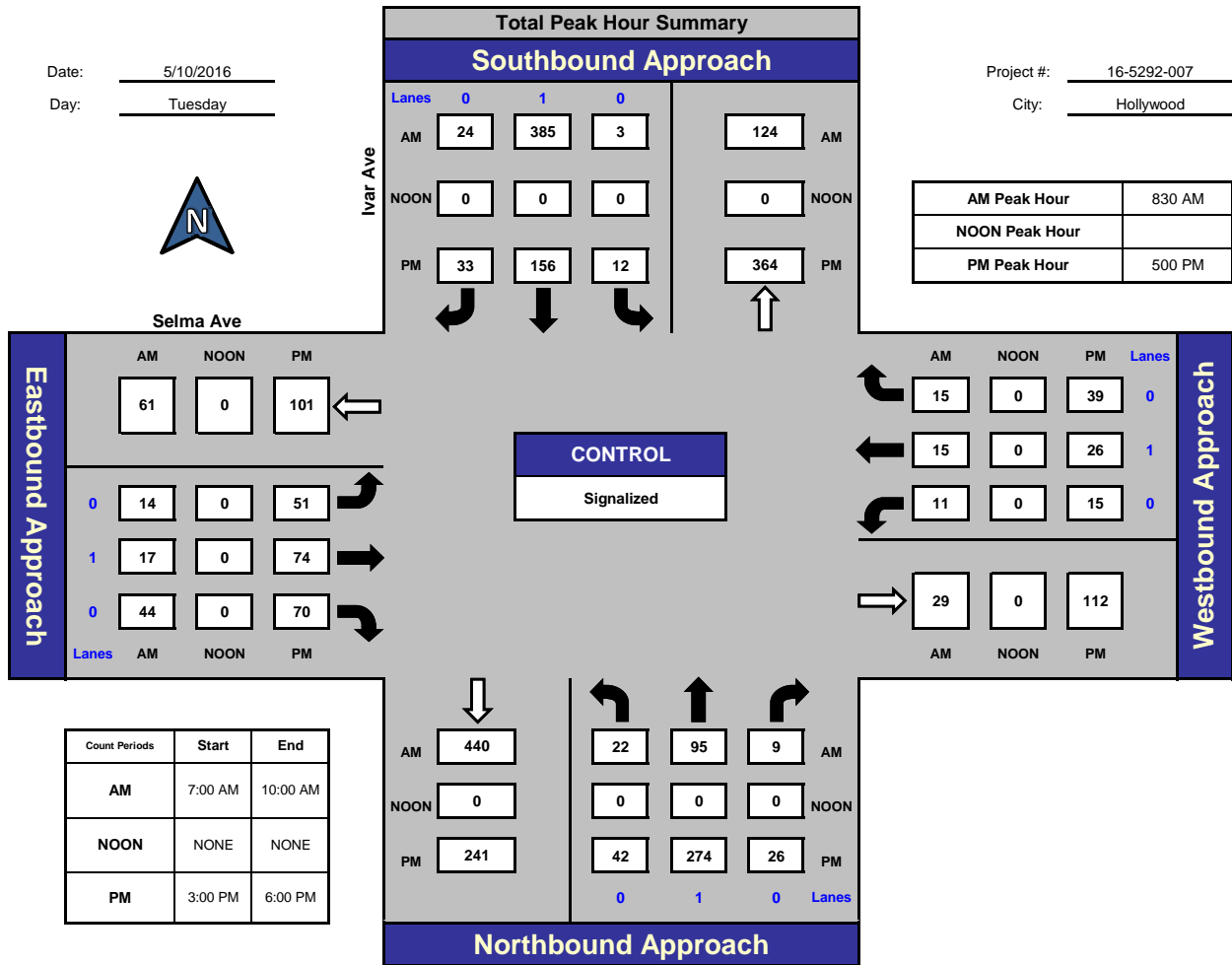


National Data & Surveying Services

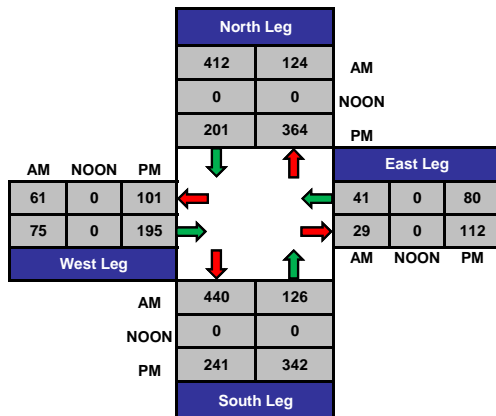
Ivar Ave and Selma Ave, Hollywood

Date: 5/10/2016
Day: Tuesday

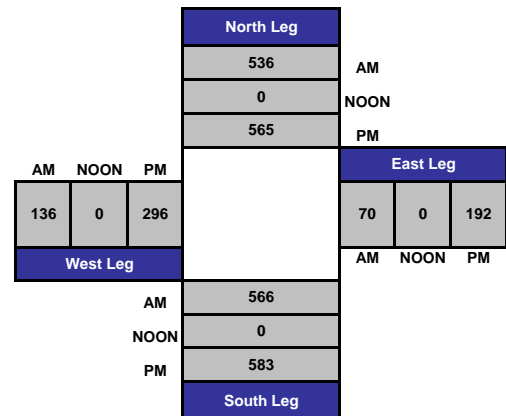
Project #: 16-5292-007
City: Hollywood



Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-007

Day: Tuesday

City: Hollywood

TOTALS

Date: 5/10/2016

AM													
NS/EW Streets:	Ivar Ave			Ivar Ave			Selma Ave			Selma Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	1	10	0	0	16	2	0	1	3	2	2	4	41
7:15 AM	2	9	0	1	16	3	0	3	2	2	0	1	39
7:30 AM	0	7	2	0	25	2	1	1	6	0	1	2	47
7:45 AM	0	14	2	2	42	1	1	4	12	1	2	7	88
8:00 AM	1	13	0	1	64	2	6	6	8	2	1	4	108
8:15 AM	5	23	1	2	79	4	2	7	9	2	1	6	141
8:30 AM	5	25	3	2	81	2	1	8	10	4	3	6	150
8:45 AM	8	31	1	1	96	10	5	4	14	3	3	2	178
9:00 AM	5	20	1	0	114	7	3	1	14	2	5	4	176
9:15 AM	4	19	4	0	94	5	5	4	6	2	4	3	150
9:30 AM	2	15	2	1	67	4	6	4	5	2	5	8	121
9:45 AM	4	30	2	2	61	3	4	3	6	1	1	5	122
TOTAL VOLUMES :	37	216	18	12	755	45	34	46	95	23	28	52	1361
APPROACH %'s :	13.65%	79.70%	6.64%	1.48%	92.98%	5.54%	19.43%	26.29%	54.29%	22.33%	27.18%	50.49%	
PEAK HR START TIME :	830 AM												TOTAL
PEAK HR VOL :	22	95	9	3	385	24	14	17	44	11	15	15	654
PEAK HR FACTOR :	0.788			0.851			0.815			0.788			0.919

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-007

Day: Tuesday

City: Hollywood

TOTALS

Date: 5/10/2016

PM													
NS/EW Streets:	Ivar Ave			Ivar Ave			Selma Ave			Selma Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
3:00 PM	5	35	6	4	27	6	4	19	8	3	4	9	130
3:15 PM	4	32	3	1	31	9	5	25	9	2	3	4	128
3:30 PM	9	69	5	5	42	6	14	17	16	4	7	6	200
3:45 PM	12	59	6	3	31	5	10	17	13	4	5	8	173
4:00 PM	8	50	7	4	38	3	10	23	8	4	8	2	165
4:15 PM	10	59	7	7	33	4	7	10	13	4	5	7	166
4:30 PM	3	45	2	3	36	8	11	12	14	4	7	11	156
4:45 PM	9	76	5	4	34	10	3	9	10	1	8	14	183
5:00 PM	11	75	9	8	35	8	20	20	19	3	4	8	220
5:15 PM	9	67	4	2	40	8	10	13	16	2	6	6	183
5:30 PM	11	66	5	0	40	11	8	24	23	4	10	14	216
5:45 PM	11	66	8	2	41	6	13	17	12	6	6	11	199
TOTAL VOLUMES :	102	699	67	43	428	84	115	206	161	41	73	100	2119
APPROACH %'s :	11.75%	80.53%	7.72%	7.75%	77.12%	15.14%	23.86%	42.74%	33.40%	19.16%	34.11%	46.73%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	42	274	26	12	156	33	51	74	70	15	26	39	818
PEAK HR FACTOR :	0.900			0.985			0.826			0.714			0.930

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-5292-007

N/S Street: Ivar Ave

E/W Street: Selma Ave

DATE: 5/10/2016

CITY: Hollywood

DAY: Tuesday

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	0	0	3	1	2	2	0
7:15 AM	3	0	3	3	2	0	1	2
7:30 AM	0	1	5	6	1	2	0	2
7:45 AM	1	1	6	8	0	3	0	0
8:00 AM	2	2	3	4	4	1	2	5
8:15 AM	2	3	2	7	1	1	3	2
8:30 AM	3	12	6	3	12	0	0	5
8:45 AM	1	7	7	7	9	4	2	2
9:00 AM	0	4	3	5	3	0	1	3
9:15 AM	0	3	2	4	3	2	2	2
9:30 AM	1	2	9	6	3	1	2	2
9:45 AM	2	2	6	7	2	4	1	2
TOTALS	17	37	52	63	41	20	16	27

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	2	0	0	0	0
7:45 AM	0	0	0	1	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	2	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	1	0	0	5	0	0	1	0

P M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	2	3	16	18	2	7	9	7
3:15 PM	2	7	20	6	7	3	8	8
3:30 PM	3	8	14	8	17	2	4	2
3:45 PM	4	12	10	10	11	9	3	8
4:00 PM	9	14	20	7	22	6	17	13
4:15 PM	6	13	14	12	10	3	11	6
4:30 PM	8	9	15	11	13	2	13	7
4:45 PM	3	9	11	7	8	4	7	7
5:00 PM	13	5	32	14	7	7	3	6
5:15 PM	7	8	9	20	11	5	10	4
5:30 PM	6	3	17	14	1	1	12	18
5:45 PM	9	9	15	19	14	8	10	14
TOTALS	72	100	193	146	123	57	107	100

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	1	0	0	1	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	2	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	1	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	1	0	1	2	0	0	5	1

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-007

Day: Tuesday

City: Hollywood

BIKES

Date: 5/10/2016

AM													
NS/EW Streets:	Ivar Ave			Ivar Ave			Selma Ave			Selma Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	1	3	0	0	1	0	0	0	0	5
8:45 AM	0	2	0	0	0	0	0	0	1	0	1	0	4
9:00 AM	0	0	0	0	2	1	0	1	1	0	0	0	5
9:15 AM	0	1	0	0	0	0	0	2	0	0	0	0	3
9:30 AM	0	0	1	0	0	0	0	0	0	0	1	1	3
9:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES :	1	4	1	2	6	1	0	5	2	0	3	3	28
APPROACH %'s :	16.67%	66.67%	16.67%	22.22%	66.67%	11.11%	0.00%	71.43%	28.57%	0.00%	50.00%	50.00%	
PEAK HR START TIME :	830 AM												TOTAL
PEAK HR VOL :	0	3	0	1	5	1	0	4	2	0	1	0	17
PEAK HR FACTOR :	0.375			0.438			0.750			0.250			0.850

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5292-007

Day: Tuesday

City: Hollywood

BIKES

Date: 5/10/2016

PM

NS/EW Streets:		Ivar Ave			Ivar Ave			Selma Ave			Selma Ave			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
3:00 PM	0	0	0	0	0	0	0	0	2	0	0	1	0	3
3:15 PM	0	2	0	0	0	1	0	0	2	0	0	0	0	5
3:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	1	0	0	1	0	0	1	1	2	1	0	7
4:00 PM	0	0	1	0	0	2	0	0	0	0	0	3	2	8
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	2	0	3
4:30 PM	0	3	0	1	0	2	0	0	0	2	0	1	0	9
4:45 PM	1	0	0	0	0	3	1	0	2	2	1	0	1	11
5:00 PM	0	0	0	0	0	1	1	0	0	1	0	1	1	5
5:15 PM	0	1	0	0	0	1	0	0	2	1	0	0	0	5
5:30 PM	0	1	0	0	0	0	0	0	1	0	0	2	0	4
5:45 PM	0	0	1	0	0	0	0	1	1	0	0	1	0	4
TOTAL VOLUMES :		1	7	4	1	11	2	1	12	7	3	12	4	65
APPROACH %'s :		8.33%	58.33%	33.33%	7.14%	78.57%	14.29%	5.00%	60.00%	35.00%	15.79%	63.16%	21.05%	
PEAK HR START TIME :		500 PM												TOTAL
PEAK HR VOL :		0	2	1	0	2	1	1	4	2	0	4	1	18
PEAK HR FACTOR :		0.750			0.375			0.583			0.625			0.900

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_5429_007

Day: TUESDAY

City: City of Hollywood

TOTALS
AM

Date: 8/27/2013

NS/EW Streets:		Vine St			Vine St			Selma Ave			Selma Ave			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
7:00 AM		2	101	4	6	232	2	2	5	5	10	4	8	381
7:15 AM		1	94	9	6	254	2	4	3	1	12	5	7	398
7:30 AM		8	116	8	8	309	5	1	7	11	8	4	12	497
7:45 AM		6	135	9	5	305	11	2	13	7	9	17	6	525
8:00 AM		3	134	15	5	308	6	3	11	16	11	21	6	539
8:15 AM		3	135	15	3	311	17	9	10	11	10	25	9	558
8:30 AM		9	141	19	11	298	9	5	18	11	22	16	12	571
8:45 AM		7	151	19	11	323	14	9	11	16	22	26	16	625
9:00 AM		18	177	19	8	292	12	10	14	9	19	22	29	629
9:15 AM		8	156	22	10	323	10	2	15	20	15	20	34	635
9:30 AM		13	147	22	7	278	23	5	12	17	21	17	33	595
9:45 AM		11	140	29	7	333	15	9	15	19	23	35	43	679
TOTAL VOLUMES :		89	1627	190	87	3566	126	61	134	143	182	212	215	6632
APPROACH %'s :		4.67%	85.36%	9.97%	2.30%	94.36%	3.33%	18.05%	39.64%	42.31%	29.89%	34.81%	35.30%	
PEAK HR START TIME :		900 AM												TOTAL
PEAK HR VOL :		50	620	92	32	1226	60	26	56	65	78	94	139	2538
PEAK HR FACTOR :		0.890			0.928			0.855			0.770			0.934

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA13_5429_007

Day: TUESDAY

City: City of Hollywood

TOTALS
PM

Date: 8/27/2013

NS/EW Streets:		Vine St			Vine St			Selma Ave			Selma Ave			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
3:00 PM		8	219	32	5	174	6	8	41	17	13	13	8	544
3:15 PM		13	228	37	21	182	9	9	36	16	17	34	16	618
3:30 PM		9	259	42	11	203	14	20	23	25	16	26	16	664
3:45 PM		19	235	47	13	206	9	17	46	22	16	18	10	658
4:00 PM		15	227	19	27	194	16	16	37	15	16	24	18	624
4:15 PM		12	249	23	22	197	18	19	31	20	14	20	25	650
4:30 PM		12	275	24	20	189	9	17	33	23	11	23	17	653
4:45 PM		13	279	22	12	187	16	18	48	20	11	20	19	665
5:00 PM		9	272	29	14	188	17	16	51	22	12	33	13	676
5:15 PM		11	264	24	22	209	18	25	47	21	9	21	10	681
5:30 PM		17	279	29	16	218	14	17	45	17	14	19	25	710
5:45 PM		14	287	31	11	176	10	11	42	17	6	26	13	644
TOTAL VOLUMES :		152	3073	359	194	2323	156	193	480	235	155	277	190	7787
APPROACH %'s :		4.24%	85.74%	10.02%	7.26%	86.91%	5.84%	21.26%	52.86%	25.88%	24.92%	44.53%	30.55%	
PEAK HR START TIME :		445 PM												TOTAL
PEAK HR VOL :		50	1094	104	64	802	65	76	191	80	46	93	67	2732
PEAK HR FACTOR :		0.960			0.935			0.933			0.888			0.962

CONTROL : Signalized

Turning Movement Count Report AM

Location ID: 1
 North/South: Argyle Avenue
 East/West: Selma Avenue

Date: 12/01/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	11	43	3	1	2	1	2	12	7	1	2	4	89
7:15	13	34	2	5	5	2	3	20	1	7	2	5	99
7:30	11	64	3	6	1	0	3	8	4	8	5	7	120
7:45	20	76	3	7	3	0	6	15	0	8	4	8	150
8:00	16	71	3	14	5	3	3	14	6	10	17	14	176
8:15	21	100	3	7	4	7	2	22	1	9	9	14	199
8:30	32	89	4	11	8	4	5	26	6	12	7	9	213
8:45	39	125	5	8	6	5	8	23	7	15	4	15	260
9:00	32	105	2	5	14	6	6	18	4	23	14	12	241
9:15	39	105	1	14	11	4	8	23	9	12	10	20	256
9:30	26	100	1	13	9	5	4	15	4	11	12	15	215
9:45	31	100	3	12	11	7	6	23	15	15	9	14	246

Total Volume:	291	1012	33	103	79	44	56	219	64	131	95	137	2264
Approach %	22%	76%	2%	46%	35%	19%	17%	65%	19%	36%	26%	38%	

Peak Hr Begin:	8:45												
PHV	136	435	9	40	40	20	26	79	24	61	40	62	972
PHF	0.858			0.862			0.806			0.832			0.935

Turning Movement Count Report PM

Location ID: 1
 North/South: Argyle Avenue
 East/West: Selma Avenue

Date: 12/01/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	25	42	2	24	17	5	3	40	7	22	19	26	232
15:15	30	39	2	20	20	6	7	34	10	24	20	30	242
15:30	28	40	2	25	18	3	4	38	13	19	19	26	235
15:45	28	56	1	18	8	5	2	41	10	18	27	34	248
16:00	20	53	2	29	19	5	10	41	15	22	19	21	256
16:15	23	50	3	20	15	8	10	48	13	17	19	22	248
16:30	22	61	1	32	18	2	2	56	9	20	20	23	266
16:45	32	53	2	20	22	4	9	49	11	17	34	30	283
17:00	27	68	1	20	13	1	9	55	12	27	14	21	268
17:15	23	65	1	27	11	3	4	58	8	15	34	21	270
17:30	18	76	4	25	16	3	8	48	13	20	28	23	282
17:45	25	61	4	24	16	3	7	50	5	19	25	15	254

Total Volume:	301	664	25	284	193	48	75	558	126	240	278	292	3084
Approach %	30%	67%	3%	54%	37%	9%	10%	74%	17%	30%	34%	36%	

Peak Hr Begin:	16:45												
PHV	100	262	8	92	62	11	30	210	44	79	110	95	1103
PHF	0.944			0.897			0.934			0.877			0.974

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	3	0	1	0	2	0	1	0
7:15	4	0	5	0	5	0	5	0
7:30	7	0	3	0	8	1	13	0
7:45	11	1	4	0	6	0	12	0
8:00	13	1	1	1	6	1	15	0
8:15	16	0	5	0	6	0	12	0
8:30	15	1	10	0	4	0	17	1
8:45	9	0	8	0	9	0	18	0
9:00	7	1	3	1	11	0	19	0
9:15	16	0	4	0	11	0	17	0
9:30	19	0	7	0	10	0	15	0
9:45	27	0	7	0	13	0	20	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	23	1	12	0	10	0	12	1
15:15	17	0	6	1	11	0	20	0
15:30	19	2	9	0	15	1	16	1
15:45	39	0	9	0	13	0	19	0
16:00	21	0	14	0	8	2	20	0
16:15	14	2	5	0	20	0	0	0
16:30	22	4	5	0	17	0	15	0
16:45	15	0	3	0	8	0	16	0
17:00	14	0	9	0	14	0	23	0
17:15	26	0	4	0	9	2	29	1
17:30	44	0	14	0	12	0	20	1
17:45	22	0	7	0	9	0	18	1

Turning Movement Count Report AM

Location ID: 3
 North/South: Gower Street
 East/West: Selma Avenue

Date: 12/01/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	19	143	0	3	0	0	2	51	1	1	0	5	225
7:15	15	154	0	1	0	1	1	55	2	2	0	2	233
7:30	24	165	2	1	0	0	0	71	2	2	0	3	270
7:45	29	154	0	3	0	0	2	85	7	1	0	3	284
8:00	37	139	1	0	0	3	1	90	5	4	0	9	289
8:15	37	174	0	2	0	0	1	84	6	4	1	5	314
8:30	33	169	2	6	0	1	1	79	4	4	0	5	304
8:45	40	156	3	3	0	1	2	83	9	5	0	4	306
9:00	55	164	0	3	1	1	1	62	4	4	0	10	305
9:15	35	167	3	3	3	1	1	75	5	5	1	7	306
9:30	32	135	1	3	0	2	1	86	9	1	0	9	279
9:45	34	139	1	1	0	0	1	80	6	4	1	4	271

Total Volume:	390	1859	13	29	4	10	14	901	60	37	3	66	3386
Approach %	17%	82%	1%	67%	9%	23%	1%	92%	6%	35%	3%	62%	

Peak Hr Begin:	8:15												
PHV	165	663	5	14	1	3	5	308	23	17	1	24	1229
PHF	0.951			0.643			0.894			0.750			0.979

Turning Movement Count Report PM

Location ID: 3
 North/South: Gower Street
 East/West: Selma Avenue

Date: 12/01/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	26	126	1	8	0	1	2	147	7	16	1	11	346
15:15	26	109	1	9	1	0	2	150	8	11	0	16	333
15:30	37	133	1	3	0	0	3	131	8	11	0	9	336
15:45	38	123	2	2	0	0	1	115	12	11	1	12	317
16:00	41	119	3	16	0	1	3	159	12	7	2	16	379
16:15	21	147	6	10	0	1	5	153	9	10	1	6	369
16:30	45	151	4	4	0	1	4	145	7	10	1	8	380
16:45	30	139	5	7	2	1	1	140	16	17	1	12	371
17:00	28	143	1	12	0	0	2	171	8	10	0	7	382
17:15	31	128	5	8	0	0	4	176	12	20	1	12	397
17:30	30	140	6	9	0	0	2	166	9	19	1	21	403
17:45	32	139	13	13	0	3	5	140	18	17	2	7	389

Total Volume:	385	1597	48	101	3	8	34	1793	126	159	11	137	4402
Approach %	19%	79%	2%	90%	3%	7%	2%	92%	6%	52%	4%	45%	

Peak Hr Begin:	17:00												
PHV	121	550	25	42	0	3	13	653	47	66	4	47	1571
PHF	0.946			0.703			0.928			0.713			0.975

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	2	0	2	0	2	0	3	0
7:15	1	0	9	0	0	0	2	0
7:30	4	0	5	0	2	1	2	0
7:45	2	0	5	1	0	0	3	0
8:00	3	0	4	0	0	0	3	0
8:15	2	0	6	0	1	0	2	0
8:30	6	0	4	0	0	0	3	0
8:45	3	0	4	0	1	0	6	0
9:00	7	0	9	0	3	0	30	0
9:15	4	0	11	0	4	0	8	0
9:30	3	0	5	0	2	0	3	0
9:45	10	0	13	0	1	0	5	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	11	0	13	1	4	1	5	1
15:15	3	0	10	0	8	0	11	0
15:30	5	0	9	0	1	0	8	1
15:45	4	0	10	0	2	0	12	0
16:00	3	0	12	0	4	0	3	1
16:15	11	0	6	0	4	0	5	0
16:30	4	0	10	0	3	0	7	0
16:45	11	0	10	0	2	0	9	0
17:00	8	0	15	0	3	0	4	0
17:15	3	0	7	0	0	0	2	0
17:30	5	0	11	1	1	0	5	0
17:45	5	0	12	0	2	0	6	0

ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

Vine St and Sunset Blvd, Hollywood

Date: 5/10/2016

Day: Tuesday

Project #: 16-5292-012

City: Hollywood



Sunset Blvd

Vine St

Total Peak Hour Summary

Southbound Approach

Lanes	0	2	1		
AM	113	1132	60	743	AM
NOON	0	0	0	0	NOON
PM	126	971	152	1142	PM

AM Peak Hour	830 AM
NOON Peak Hour	
PM Peak Hour	500 PM

CONTROL

Signalized

Eastbound Approach

	AM	NOON	PM	
	1477	0	1311	
1	33	0	98	
3	764	0	1447	
0	81	0	105	
Lanes	AM	NOON	PM	

Westbound Approach

	AM	NOON	PM	Lanes
	72	0	104	0
	1273	0	1087	3
	207	0	145	1
	1032	0	1759	
	AM	NOON	PM	

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON	NONE	NONE
PM	3:00 PM	6:00 PM

	AM				AM
	1420	91	638	208	
	0	0	0	0	
	1221	98	940	160	
	AM	NOON	PM		

Northbound Approach

Total Ins & Outs

North Leg				
1305	743	AM		
0	0	NOON		
1249	1142	PM		
East Leg				
1552	0	1336		
1032	0	1759		
West Leg				
1477	0	1311		
878	0	1650		
South Leg				
1420	937	AM		
0	0	NOON		
1221	1198	PM		

Total Volume Per Leg

North Leg				
2048	AM			
0	NOON			
2391	PM			
East Leg				
2584	AM	0	3095	
West Leg				
2355	AM	0	2961	
South Leg				
2357	AM			
0	NOON			
2419	PM			

Turning Movement Count Report AM

Location ID: 20
 North/South: Argyle Ave
 East/West: Sunset Blvd

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	16	0	7	14	293	0	0	0	0	0	135	17	482
7:15	20	0	9	4	370	0	0	0	0	0	161	14	578
7:30	32	0	10	16	356	0	0	0	0	0	186	6	606
7:45	38	0	20	14	327	0	0	0	0	0	207	16	622
8:00	34	0	19	25	361	0	0	0	0	0	192	21	652
8:15	40	0	21	19	348	0	0	0	0	0	216	25	669
8:30	52	0	24	19	349	0	0	0	0	0	189	24	657
8:45	36	0	21	22	322	0	0	0	0	0	219	42	662
9:00	51	0	25	44	299	0	0	0	0	0	225	30	674
9:15	35	0	13	20	307	0	0	0	0	0	211	44	630
9:30	35	0	24	24	307	0	0	0	0	0	229	40	659
9:45	36	0	6	13	284	0	0	0	0	0	212	30	581

Total Volume:	425	0	199	234	3923	0	0	0	0	0	2382	309	7472
Approach %	68%	0%	32%	6%	94%	0%	#DIV/0!	#DIV/0!	#DIV/0!	0%	89%	11%	

Peak Hr Begin:	8:15												
PHV	179	0	91	104	1318	0	0	0	0	0	849	121	2662
PHF	0.888			0.966			#DIV/0!			0.929			0.987

Turning Movement Count Report PM

Location ID: 20
 North/South: Argyle Ave
 East/West: Sunset Blvd

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	33	0	17	26	268	0	0	0	0	0	291	36	671
15:15	29	0	20	26	281	0	0	0	0	0	304	32	692
15:30	40	0	25	27	248	0	0	0	0	0	293	38	671
15:45	25	0	13	27	284	0	0	0	0	0	301	38	688
16:00	29	0	22	27	247	0	0	0	0	0	367	40	732
16:15	31	0	17	25	273	0	0	0	0	0	295	41	682
16:30	32	0	17	29	265	0	0	0	0	0	329	34	706
16:45	32	0	14	23	282	0	0	0	0	0	367	33	751
17:00	36	0	19	31	243	0	0	0	0	0	302	38	669
17:15	42	0	14	16	310	0	0	0	0	0	333	30	745
17:30	37	0	16	26	258	0	0	0	0	0	344	44	725
17:45	47	0	26	33	254	0	0	0	0	0	340	34	734

Total Volume:	413	0	220	316	3213	0	0	0	0	0	3866	438	8466
Approach %	65%	0%	35%	9%	91%	0%	#DIV/0!	#DIV/0!	#DIV/0!	0%	90%	10%	

Peak Hr Begin:	16:45												
PHV	147	0	63	96	1093	0	0	0	0	0	1346	145	2890
PHF	0.938			0.912			#DIV/0!			0.932			0.962

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	2	0	3	0	0	0	7	1
7:15	3	0	6	2	0	0	5	0
7:30	4	0	0	2	0	0	3	0
7:45	8	0	4	1	0	0	0	0
8:00	4	0	4	0	0	0	4	0
8:15	11	1	1	3	0	0	5	0
8:30	14	0	5	5	0	0	4	0
8:45	18	1	6	9	0	0	5	1
9:00	14	0	2	0	0	0	5	0
9:15	10	0	7	2	0	0	5	0
9:30	24	1	3	6	0	0	9	0
9:45	14	1	5	5	0	0	10	3

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	29	0	21	1	0	0	20	2
15:15	28	0	11	3	0	0	6	3
15:30	32	0	5	1	0	0	14	0
15:45	19	3	12	3	0	0	12	2
16:00	25	1	8	2	0	0	11	0
16:15	31	0	9	1	0	0	17	2
16:30	16	1	7	3	0	0	8	2
16:45	11	1	7	2	0	0	7	0
17:00	19	1	6	4	0	0	5	0
17:15	25	0	7	1	0	0	3	1
17:30	19	0	5	2	0	0	9	1
17:45	17	0	6	0	0	0	12	2

Turning Movement Count Report AM

Location ID: 2
 North/South: El Centro Avenue
 East/West: Sunset Boulevard

Date: 12/01/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	2	1	0	7	388	8	12	5	4	5	135	6	573
7:15	9	3	3	7	399	10	10	6	4	7	198	4	660
7:30	7	7	1	8	414	12	19	12	7	19	204	4	714
7:45	7	8	3	11	418	17	21	14	8	5	225	4	741
8:00	10	11	0	17	373	12	14	15	13	20	237	6	728
8:15	6	16	0	7	425	15	18	9	7	26	246	11	786
8:30	7	8	2	21	348	30	15	22	15	20	215	10	713
8:45	4	12	5	18	337	19	17	15	15	30	216	14	702
9:00	13	18	3	18	299	20	19	9	16	30	198	11	654
9:15	6	15	4	16	230	19	14	17	15	29	225	14	604
9:30	3	12	5	10	285	12	18	21	5	23	234	16	644
9:45	5	10	3	17	288	21	18	22	11	29	213	11	648

Total Volume:	79	121	29	157	4204	195	195	167	120	243	2546	111	8167
Approach %	34%	53%	13%	3%	92%	4%	40%	35%	25%	8%	88%	4%	

Peak Hr Begin:	7:30												
PHV	30	42	4	43	1630	56	72	50	35	70	912	25	2969
PHF	0.864			0.967			0.913			0.890			0.944

Turning Movement Count Report PM

Location ID: 2
 North/South: El Centro Avenue
 East/West: Sunset Boulevard

Date: 12/01/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	11	6	17	15	281	14	40	26	12	14	319	6	761
15:15	12	17	10	20	278	21	32	27	15	23	320	11	786
15:30	14	16	17	12	281	25	33	32	6	15	294	4	749
15:45	5	15	13	21	283	8	31	38	8	19	307	7	755
16:00	14	14	5	15	305	18	31	39	8	11	301	12	773
16:15	8	9	5	11	268	4	40	20	13	17	338	9	742
16:30	15	12	5	16	291	14	35	37	11	23	389	8	856
16:45	14	16	8	27	288	14	30	42	11	18	335	13	816
17:00	9	13	12	12	274	16	23	40	15	16	394	8	832
17:15	12	9	10	22	318	11	37	41	14	23	376	11	884
17:30	10	18	13	20	336	17	27	45	13	15	389	10	913
17:45	8	14	8	29	341	20	29	28	15	12	370	16	890

Total Volume:	132	159	123	220	3544	182	388	415	141	206	4132	115	9757
Approach %	32%	38%	30%	6%	90%	5%	41%	44%	15%	5%	93%	3%	

Peak Hr Begin:	17:00												
PHV	39	54	43	83	1269	64	116	154	57	66	1529	45	3519
PHF	0.829			0.908			0.889			0.981			0.964

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	7	0	0	0	3	1	1	0
7:15	4	0	3	0	4	1	1	0
7:30	8	1	4	0	5	0	2	0
7:45	10	0	1	0	8	0	4	0
8:00	8	1	4	1	6	0	4	0
8:15	12	0	3	0	12	0	5	0
8:30	15	0	5	0	7	1	7	0
8:45	16	0	4	0	8	2	5	1
9:00	16	0	2	0	7	1	7	0
9:15	11	0	1	0	10	3	4	0
9:30	7	0	4	0	5	2	0	1
9:45	14	1	4	0	6	1	5	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	13	2	3	0	20	3	9	1
15:15	27	0	4	0	20	2	12	1
15:30	14	0	1	0	17	0	9	2
15:45	14	0	4	0	15	1	8	1
16:00	11	0	3	0	15	0	4	2
16:15	19	0	7	1	14	0	4	1
16:30	14	1	1	1	14	2	8	1
16:45	20	0	4	0	8	1	6	1
17:00	9	0	8	1	19	1	4	1
17:15	14	0	9	1	10	2	5	1
17:30	11	0	11	1	9	2	6	1
17:45	4	0	5	1	10	0	3	2

Turning Movement Count Report AM

Location ID: 21
 North/South: Gower Street
 East/West: Sunset Boulevard

Date: 11/10/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	26	108	16	4	402	30	10	41	12	13	159	5	826
7:15	13	100	17	6	440	40	19	40	9	5	183	6	878
7:30	16	136	9	6	388	36	13	64	13	20	186	9	896
7:45	14	135	25	7	382	39	16	64	12	14	175	7	890
8:00	8	126	13	11	404	24	16	84	7	8	227	11	939
8:15	14	111	21	17	422	38	22	75	10	22	197	21	970
8:30	14	118	22	10	436	38	19	91	14	18	205	15	1000
8:45	12	101	21	9	300	38	25	72	10	6	208	11	813
9:00	13	115	30	18	341	45	21	69	4	14	154	10	834
9:15	6	101	25	20	233	41	17	56	9	12	194	16	730
9:30	10	115	25	21	294	38	30	64	6	12	179	11	805
9:45	20	93	29	23	232	40	25	66	8	13	174	10	733

Total Volume:	166	1359	253	152	4274	447	233	786	114	157	2241	132	10314
Approach %	9%	76%	14%	3%	88%	9%	21%	69%	10%	6%	89%	5%	

Peak Hr Begin:	7:45												
PHV	50	490	81	45	1644	139	73	314	43	62	804	54	3799
PHF	0.892			0.944			0.867			0.935			0.950

Turning Movement Count Report PM

Location ID: 21
 North/South: Gower Street
 East/West: Sunset Boulevard

Date: 11/10/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	17	103	26	17	256	23	14	90	13	16	296	15	886
15:15	12	102	29	10	285	22	17	102	17	12	283	23	914
15:30	19	114	21	15	248	17	27	110	14	18	300	19	922
15:45	8	101	29	31	284	20	25	99	6	17	335	16	971
16:00	13	104	13	31	292	26	22	115	6	18	339	17	996
16:15	17	116	17	30	306	13	29	101	7	13	318	19	986
16:30	14	104	24	31	324	18	21	114	5	8	355	19	1037
16:45	17	107	18	23	278	21	19	130	9	15	311	33	981
17:00	14	108	14	31	290	15	17	134	10	16	362	33	1044
17:15	13	106	23	29	298	18	24	127	13	22	369	21	1063
17:30	15	112	19	39	330	15	19	106	9	21	401	36	1122
17:45	12	97	16	29	322	24	25	117	18	20	320	23	1023

Total Volume:	171	1274	249	316	3513	232	259	1345	127	196	3989	274	11945
Approach %	10%	75%	15%	8%	87%	6%	15%	78%	7%	4%	89%	6%	

Peak Hr Begin:	17:00												
PHV	54	423	72	128	1240	72	85	484	50	79	1452	113	4252
PHF	0.940			0.938			0.944			0.897			0.947

Pedestrian/Bicycle Count Report

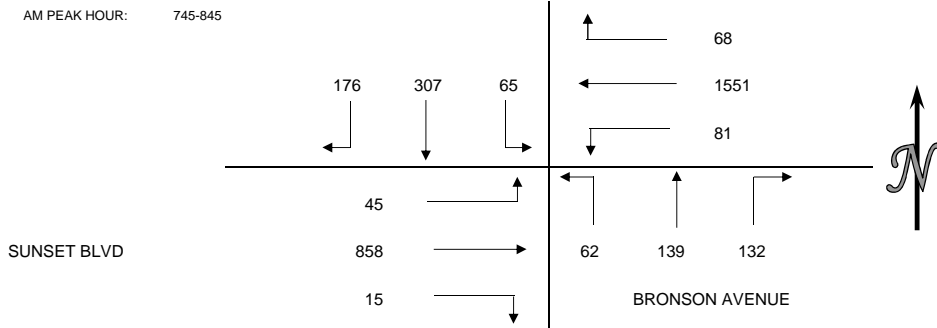
	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	10	0	5	0	5	0	7	0
7:15	15	1	10	0	7	0	9	0
7:30	11	0	15	0	16	0	5	0
7:45	19	0	17	0	18	0	5	0
8:00	18	0	6	0	9	0	8	0
8:15	15	0	6	0	17	0	11	0
8:30	21	0	11	2	16	3	9	0
8:45	25	0	23	2	21	3	13	0
9:00	23	0	12	2	20	4	10	0
9:15	18	0	19	0	28	4	9	1
9:30	15	0	13	0	24	2	16	0
9:45	20	0	11	3	22	3	12	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	27	0	10	1	20	3	29	0
15:15	20	0	8	0	34	1	23	0
15:30	16	0	18	1	46	0	12	0
15:45	24	0	6	0	26	0	13	0
16:00	24	0	6	0	38	2	18	0
16:15	17	0	14	1	32	1	20	0
16:30	15	0	9	0	36	2	17	0
16:45	11	0	17	1	34	0	11	0
17:00	20	0	25	1	50	3	18	0
17:15	6	0	27	1	55	1	22	0
17:30	3	0	18	0	51	0	12	0
17:45	4	0	18	1	44	3	14	0

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 13 2015
 PERIOD: 7:00 AM TO 10:00 AM
 INTERSECTION: N/S BRONSON AVENUE
 E/W SUNSET BLVD
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	21	28	11	8	350	14	21	14	4	0	178	12	661
715-730	24	40	15	14	382	28	34	33	15	5	187	11	788
730-745	36	55	9	6	376	24	41	36	15	5	214	11	828
745-800	32	73	16	10	403	26	26	32	3	7	212	10	850
800-815	50	92	14	22	387	21	40	31	20	3	226	8	914
815-830	64	66	17	22	373	16	38	48	27	4	200	14	889
830-845	30	76	18	14	388	18	28	28	12	1	220	13	846
845-900	44	92	21	14	371	28	15	46	2	2	188	17	840
900-915	42	105	24	14	224	26	20	33	7	8	203	16	722
915-930	35	96	23	9	175	13	14	30	3	2	221	12	633
930-945	26	92	15	9	192	17	18	28	4	4	197	16	618
945-1000	28	102	20	8	186	15	23	35	10	5	182	9	623
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	113	196	51	38	1511	92	122	115	37	17	791	44	3127
715-815	142	260	54	52	1548	99	141	132	53	20	839	40	3380
730-830	182	286	56	60	1539	87	145	147	65	19	852	43	3481
745-845	176	307	65	68	1551	81	132	139	62	15	858	45	3499
800-900	188	326	70	72	1519	83	121	153	61	10	834	52	3489
815-915	180	339	80	64	1356	88	101	155	48	15	811	60	3297
830-930	151	369	86	51	1158	85	77	137	24	13	832	58	3041
845-945	147	385	83	46	962	84	67	137	16	16	809	61	2813
900-1000	131	395	82	40	777	71	75	126	24	19	803	53	2596



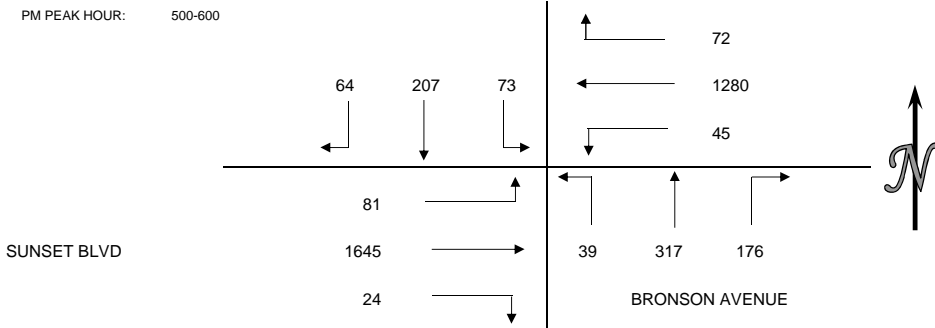
PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	12	13	13	15	53
715-730	22	25	16	20	83
730-745	10	28	12	8	58
745-800	15	11	21	8	55
800-815	14	23	14	3	54
815-830	23	20	23	13	79
830-845	29	18	25	22	94
845-900	27	22	14	7	70
900-915	14	14	19	16	63
915-930	29	12	17	25	83
930-945	18	15	16	13	62
945-1000	18	7	11	14	50
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	59	77	62	51	249
715-815	61	87	63	39	250
730-830	62	82	70	32	246
745-845	81	72	83	46	282
800-900	93	83	76	45	297
815-915	93	74	81	58	306
830-930	99	66	75	70	310
845-945	88	63	66	61	278
900-1000	79	48	63	68	258

BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	1	2	2	1	6
715-730	2	0	1	0	3
730-745	4	1	2	0	7
745-800	0	0	0	0	0
800-815	3	2	4	0	9
815-830	4	3	1	1	9
830-845	4	1	1	0	6
845-900	3	1	3	3	10
900-915	7	1	0	1	9
915-930	1	2	6	0	9
930-945	2	0	2	1	5
945-1000	3	0	3	0	6
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	7	3	5	1	16
715-815	9	3	7	0	19
730-830	11	6	7	1	25
745-845	11	6	6	1	24
800-900	14	7	9	4	34
815-915	18	6	5	5	34
830-930	15	5	10	4	34
845-945	13	4	11	5	33
900-1000	13	3	11	2	29

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 13 2015
 PERIOD: 3:00 PM TO 6:00 PM
 INTERSECTION: N/S BRONSON AVENUE
 E/W SUNSET BLVD
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	21	54	23	19	323	19	49	62	9	3	390	27	999
315-330	19	37	21	15	321	25	30	65	4	6	302	21	866
330-345	16	53	24	17	286	16	39	55	8	8	335	23	880
345-400	32	48	15	32	310	20	50	50	5	6	374	21	963
400-415	18	74	15	15	284	16	46	75	7	3	359	21	933
415-430	14	38	19	19	303	10	38	69	11	5	366	24	916
430-445	14	46	14	15	333	12	31	69	6	7	359	23	929
445-500	22	53	16	22	278	14	31	84	4	9	388	17	938
500-515	15	55	15	17	315	8	34	72	6	6	407	22	972
515-530	17	59	17	19	313	16	35	73	11	7	423	23	1013
530-545	22	58	19	22	320	13	55	97	11	4	410	19	1050
545-600	10	35	22	14	332	8	52	75	11	7	405	17	988
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	88	192	83	83	1240	80	168	232	26	23	1401	92	3708
315-415	85	212	75	79	1201	77	165	245	24	23	1370	86	3642
330-430	80	213	73	83	1183	62	173	249	31	22	1434	89	3692
345-445	78	206	63	81	1230	58	165	263	29	21	1458	89	3741
400-500	68	211	64	71	1198	52	146	297	28	24	1472	85	3716
415-515	65	192	64	73	1229	44	134	294	27	27	1520	86	3755
430-530	68	213	62	73	1239	50	131	298	27	29	1577	85	3852
445-545	76	225	67	80	1226	51	155	326	32	26	1628	81	3973
500-600	64	207	73	72	1280	45	176	317	39	24	1645	81	4023



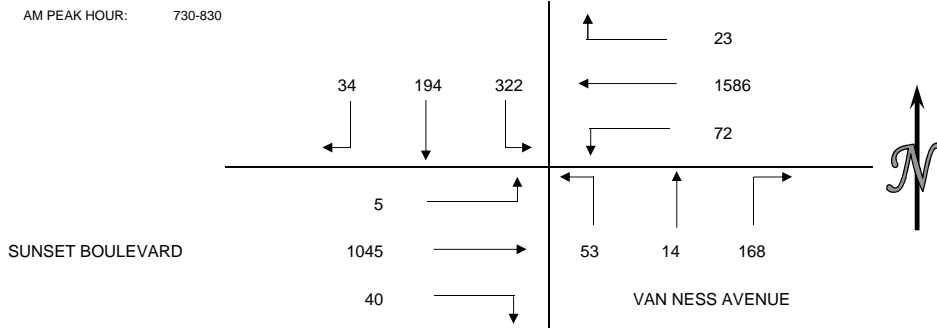
PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	28	48	44	16	136
315-330	12	12	31	22	77
330-345	17	11	35	15	78
345-400	31	9	16	25	81
400-415	20	13	22	19	74
415-430	20	11	25	18	74
430-445	16	6	19	7	48
445-500	19	5	13	21	58
500-515	29	11	28	21	89
515-530	25	10	21	11	67
530-545	24	16	26	15	81
545-600	20	18	35	20	93
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	88	80	126	78	372
315-415	80	45	104	81	310
330-430	88	44	98	77	307
345-445	87	39	82	69	277
400-500	75	35	79	65	254
415-515	84	33	85	67	269
430-530	89	32	81	60	262
445-545	97	42	88	68	295
500-600	98	55	110	67	330

BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	7	1	2	1	11
315-330	2	4	4	1	11
330-345	1	2	6	1	10
345-400	1	2	6	1	10
400-415	2	0	6	0	8
415-430	8	1	3	2	14
430-445	2	0	2	1	5
445-500	5	1	2	2	10
500-515	3	2	3	2	10
515-530	4	0	3	3	10
530-545	5	0	4	2	11
545-600	4	0	9	2	15
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	11	9	18	4	42
315-415	6	8	22	3	39
330-430	12	5	21	4	42
345-445	13	3	17	4	37
400-500	17	2	13	5	37
415-515	18	4	10	7	39
430-530	14	3	10	8	35
445-545	17	3	12	9	41
500-600	16	2	19	9	46

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 13 2015
 PERIOD: 7:00 AM TO 10:00 AM
 INTERSECTION: N/S VAN NESS AVENUE
 E/W SUNSET BOULEVARD
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	2	42	74	4	400	13	16	2	10	8	202	2	775
715-730	4	39	91	6	354	26	37	5	9	8	221	0	800
730-745	7	41	90	6	394	24	53	3	13	8	281	1	921
745-800	9	46	67	7	413	10	48	4	16	12	253	1	886
800-815	6	51	73	4	392	18	40	3	16	12	276	2	893
815-830	12	56	92	6	387	20	27	4	8	8	235	1	856
830-845	11	80	93	4	385	15	24	1	8	6	260	2	889
845-900	19	79	89	5	363	12	20	6	11	9	246	1	860
900-915	9	75	76	7	263	15	15	4	10	13	230	1	718
915-930	19	58	91	3	211	24	16	4	10	6	218	7	667
930-945	10	67	69	2	207	20	17	6	8	2	245	4	657
945-1000	7	48	71	8	193	29	17	11	8	9	213	1	615
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	22	168	322	23	1561	73	154	14	48	36	957	4	3382
715-815	26	177	321	23	1553	78	178	15	54	40	1031	4	3500
730-830	34	194	322	23	1586	72	168	14	53	40	1045	5	3556
745-845	38	233	325	21	1577	63	139	12	48	38	1024	6	3524
800-900	48	266	347	19	1527	65	111	14	43	35	1017	6	3498
815-915	51	290	350	22	1398	62	86	15	37	36	971	5	3323
830-930	58	292	349	19	1222	66	75	15	39	34	954	11	3134
845-945	57	279	325	17	1044	71	68	20	39	30	939	13	2902
900-1000	45	248	307	20	874	88	65	25	36	30	906	13	2657



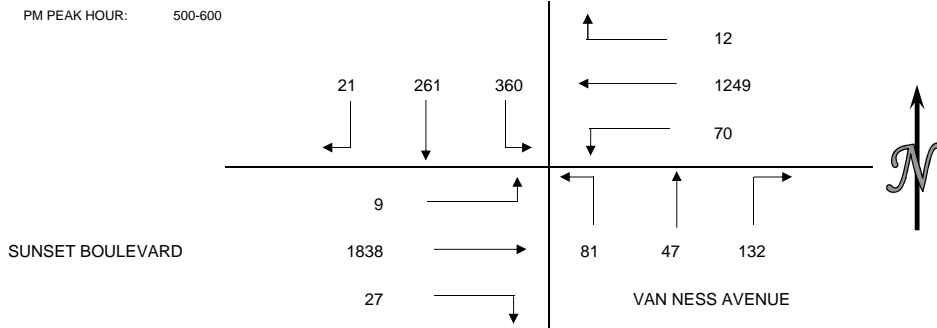
PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	4	6	0	8	18
715-730	5	7	6	3	21
730-745	11	0	14	2	27
745-800	5	3	17	1	26
800-815	12	8	12	6	38
815-830	11	0	6	3	20
830-845	5	2	6	4	17
845-900	5	1	3	2	11
900-915	4	1	6	1	12
915-930	3	1	7	0	11
930-945	2	1	3	2	8
945-1000	13	3	3	3	22
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	25	16	37	14	92
715-815	33	18	49	12	112
730-830	39	11	49	12	111
745-845	33	13	41	14	101
800-900	33	11	27	15	86
815-915	25	4	21	10	60
830-930	17	5	22	7	51
845-945	14	4	19	5	42
900-1000	22	6	19	6	53

BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	1	0	0	0	1
715-730	1	0	0	0	1
730-745	1	0	1	0	2
745-800	0	0	0	0	0
800-815	0	0	0	0	0
815-830	0	0	0	0	0
830-845	0	0	0	0	0
845-900	2	0	0	2	4
900-915	0	0	1	0	1
915-930	1	0	1	0	2
930-945	0	0	0	0	0
945-1000	0	0	1	0	1
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	3	0	1	0	4
715-815	2	0	1	0	3
730-830	1	0	1	0	2
745-845	0	0	0	0	0
800-900	2	0	0	2	4
815-915	2	0	1	2	5
830-930	3	0	2	2	7
845-945	3	0	2	2	7
900-1000	1	0	3	0	4

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 13 2015
 PERIOD: 3:00 PM TO 6:00 PM
 INTERSECTION: N/S VAN NESS AVENUE
 E/W SUNSET BOULEVARD
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	6	56	83	4	310	20	61	6	29	12	431	0	1018
315-330	11	50	92	9	337	16	39	6	18	6	371	4	959
330-345	6	46	76	5	324	13	32	4	9	6	403	2	926
345-400	9	61	81	4	308	15	36	6	14	9	403	3	949
400-415	8	48	77	7	289	20	64	9	18	9	402	2	953
415-430	4	65	109	9	316	11	27	10	16	8	386	2	963
430-445	3	49	85	6	307	13	33	13	15	7	424	1	956
445-500	7	71	107	7	297	12	36	10	21	4	411	2	985
500-515	6	59	100	11	300	20	27	16	15	10	420	3	987
515-530	4	62	77	1	307	14	44	8	25	4	463	1	1010
530-545	6	73	88	0	321	17	36	12	14	7	461	3	1038
545-600	5	67	95	0	321	19	25	11	27	6	494	2	1072
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	32	213	332	22	1279	64	168	22	70	33	1608	9	3852
315-415	34	205	326	25	1258	64	171	25	59	30	1579	11	3787
330-430	27	220	343	25	1237	59	159	29	57	32	1594	9	3791
345-445	24	223	352	26	1220	59	160	38	63	33	1615	8	3821
400-500	22	233	378	29	1209	56	160	42	70	28	1623	7	3857
415-515	20	244	401	33	1220	56	123	49	67	29	1641	8	3891
430-530	20	241	369	25	1211	59	140	47	76	25	1718	7	3938
445-545	23	265	372	19	1225	63	143	46	75	25	1755	9	4020
500-600	21	261	360	12	1249	70	132	47	81	27	1838	9	4107



PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	2	4	27	1	34
315-330	1	9	10	11	31
330-345	0	5	21	6	32
345-400	3	4	2	3	12
400-415	0	7	13	3	23
415-430	2	9	18	4	33
430-445	0	6	8	1	15
445-500	1	7	5	1	14
500-515	0	11	14	1	26
515-530	0	1	11	0	12
530-545	0	0	6	5	11
545-600	0	0	8	3	11
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	6	22	60	21	109
315-415	4	25	46	23	98
330-430	5	25	54	16	100
345-445	5	26	41	11	83
400-500	3	29	44	9	85
415-515	3	33	45	7	88
430-530	1	25	38	3	67
445-545	1	19	36	7	63
500-600	0	12	39	9	60

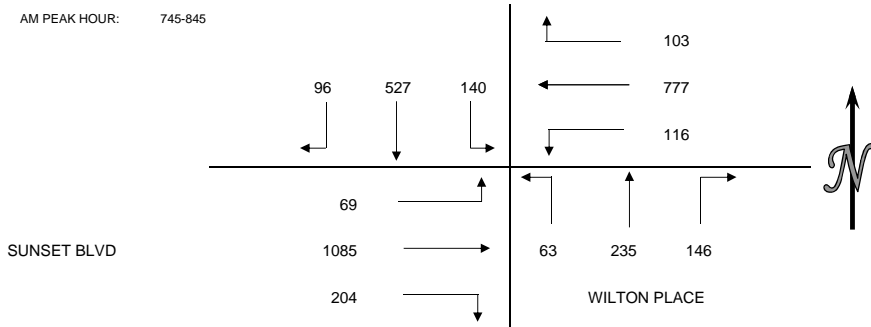
BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	0	1	3	0	4
315-330	3	1	7	1	12
330-345	0	1	7	1	9
345-400	0	0	3	0	3
400-415	0	0	5	1	6
415-430	1	1	3	0	5
430-445	0	1	0	0	1
445-500	0	0	1	0	1
500-515	0	0	4	0	4
515-530	0	0	4	1	5
530-545	0	1	4	1	6
545-600	0	0	4	0	4
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	3	3	20	2	28
315-415	3	2	22	3	30
330-430	1	2	18	2	23
345-445	1	2	11	1	15
400-500	1	2	9	1	13
415-515	1	2	8	0	11
430-530	0	1	9	1	11
445-545	0	1	13	2	16
500-600	0	1	16	2	19

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 20 2015
 PERIOD: 7:00 AM TO 10:00 AM
 INTERSECTION: N/S WILTON PLACE
 E/W SUNSET BLVD
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	25	71	25	16	170	11	24	50	6	15	174	8	595
715-730	19	90	43	22	188	28	22	49	12	28	173	14	688
730-745	33	126	33	16	202	23	37	56	21	52	283	12	894
745-800	27	115	38	24	207	31	41	42	18	65	292	18	918
800-815	25	142	45	17	185	28	43	66	19	46	253	18	887
815-830	24	121	30	27	172	24	30	51	11	50	266	17	823
830-845	20	149	27	35	213	33	32	76	15	43	274	16	933
845-900	28	126	38	29	198	38	32	32	18	34	235	12	820
900-915	22	116	29	24	163	34	21	44	8	30	229	10	730
915-930	48	152	40	29	142	24	28	52	9	20	189	19	752
930-945	22	110	26	25	154	31	36	48	10	18	201	13	694
945-1000	13	83	18	27	145	22	29	44	13	24	196	10	624
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	104	402	139	78	767	93	124	197	57	160	922	52	3095
715-815	104	473	159	79	782	110	143	213	70	191	1001	62	3387
730-830	109	504	146	84	766	106	151	215	69	213	1094	65	3522
745-845	96	527	140	103	777	116	146	235	63	204	1085	69	3561
800-900	97	538	140	108	768	123	137	225	63	173	1028	63	3463
815-915	94	512	124	115	746	129	115	203	52	157	1004	55	3306
830-930	118	543	134	117	716	129	113	204	50	127	927	57	3235
845-945	120	504	133	107	657	127	117	176	45	102	854	54	2996
900-1000	105	461	113	105	604	111	114	188	40	92	815	52	2800

AM PEAK HOUR: 745-845



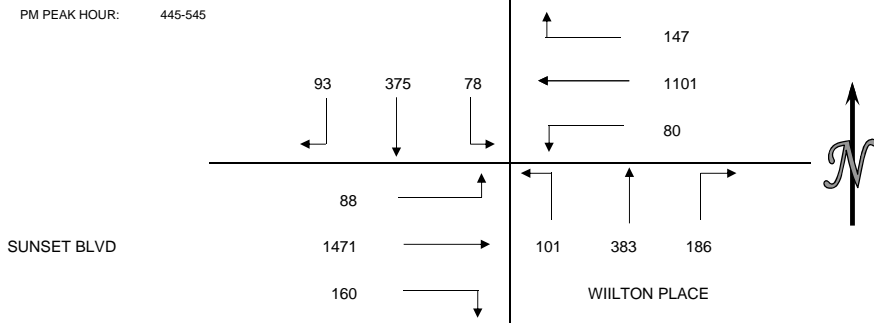
PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	25	25	19	27	96
715-730	45	32	29	34	140
730-745	56	83	38	43	220
745-800	69	88	79	68	304
800-815	48	50	33	31	162
815-830	32	24	11	13	80
830-845	19	13	15	9	56
845-900	13	7	3	8	31
900-915	13	6	9	7	35
915-930	13	4	5	6	28
930-945	5	4	12	3	24
945-1000	10	7	8	5	30
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	195	228	165	172	760
715-815	218	253	179	176	826
730-830	205	245	161	155	766
745-845	168	175	138	121	602
800-900	112	94	62	61	329
815-915	77	50	38	37	202
830-930	58	30	32	30	150
845-945	44	21	29	24	118
900-1000	41	21	34	21	117

BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	4	2	1	4	11
715-730	3	0	0	2	5
730-745	3	0	1	2	6
745-800	4	2	1	0	7
800-815	3	2	1	1	7
815-830	6	2	2	2	12
830-845	2	0	2	1	5
845-900	1	0	1	0	2
900-915	0	0	1	1	2
915-930	2	3	1	1	7
930-945	5	1	0	0	6
945-1000	4	1	1	1	7
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	14	4	3	8	29
715-815	13	4	3	5	25
730-830	16	6	5	5	32
745-845	15	6	6	4	31
800-900	12	4	6	4	26
815-915	9	2	6	4	21
830-930	5	3	5	3	16
845-945	8	4	3	2	17
900-1000	11	5	3	3	22

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 20 2015
 PERIOD: 3:00 PM TO 6:00 PM
 INTERSECTION: N/S WILTON PLACE
 E/W SUNSET BLVD
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	18	79	22	37	197	16	41	66	24	35	320	30	885
315-330	17	91	16	47	243	27	37	71	14	32	343	21	959
330-345	11	96	24	37	210	23	29	89	17	44	369	20	969
345-400	28	93	19	42	227	24	41	72	25	34	327	18	950
400-415	20	104	29	44	258	14	41	82	28	63	360	20	1063
415-430	11	87	17	35	249	21	32	78	16	34	337	16	933
430-445	26	80	19	36	272	23	33	92	17	27	363	20	1008
445-500	22	96	15	36	282	19	50	99	26	41	352	20	1058
500-515	11	83	28	43	272	21	43	94	23	44	343	24	1029
515-530	30	103	18	36	259	22	39	109	24	38	367	23	1068
530-545	30	93	17	32	288	18	54	81	28	37	409	21	1108
545-600	17	81	11	34	248	17	47	96	22	29	393	21	1016
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	74	359	81	163	877	90	148	298	80	145	1359	89	3763
315-415	76	384	88	170	938	88	148	314	84	173	1399	79	3941
330-430	70	380	89	158	944	82	143	321	86	175	1393	74	3915
345-445	85	364	84	157	1006	82	147	324	86	158	1387	74	3954
400-500	79	367	80	151	1061	77	156	351	87	165	1412	76	4062
415-515	70	346	79	150	1075	84	158	363	82	146	1395	80	4028
430-530	89	362	80	151	1085	85	165	394	90	150	1425	87	4163
445-545	93	375	78	147	1101	80	186	383	101	160	1471	88	4263
500-600	88	360	74	145	1067	78	183	380	97	148	1512	89	4221



PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	66	91	81	58	296
315-330	32	57	55	42	186
330-345	33	19	16	18	86
345-400	33	25	27	17	102
400-415	27	23	13	18	81
415-430	33	14	13	17	77
430-445	24	14	12	11	61
445-500	32	14	9	18	73
500-515	23	21	20	10	74
515-530	23	23	7	8	61
530-545	35	18	8	8	69
545-600	29	22	8	7	66
HOUR TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	164	192	179	135	670
315-415	125	124	111	95	455
330-430	126	81	69	70	346
345-445	117	76	65	63	321
400-500	116	65	47	64	292
415-515	112	63	54	56	285
430-530	102	72	48	47	269
445-545	113	76	44	44	277
500-600	110	84	43	33	270

BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	1	3	5	1	10
315-330	4	0	2	2	8
330-345	3	0	2	0	5
345-400	3	1	0	1	5
400-415	2	1	4	3	10
415-430	6	1	4	1	12
430-445	2	1	4	1	8
445-500	4	1	4	3	12
500-515	2	0	2	1	5
515-530	2	0	1	0	3
530-545	2	0	2	1	5
545-600	4	3	1	0	8
HOUR TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	11	4	9	4	28
315-415	12	2	8	6	28
330-430	14	3	10	5	32
345-445	13	4	12	6	35
400-500	14	4	16	8	42
415-515	14	3	14	6	37
430-530	10	2	11	5	28
445-545	10	1	9	5	25
500-600	10	3	6	2	21

Turning Movement Count Report AM

Location ID: 1 Unsignalized
 North/South: Argyle Ave
 East/West: US-101 SB On-ramp

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	20	11	0	0	0	7	29	0	0	0	0	67
7:15	0	31	16	0	0	0	14	37	0	0	0	0	98
7:30	0	26	22	0	0	0	8	41	0	0	0	0	97
7:45	0	39	14	0	0	0	10	46	0	0	0	0	109
8:00	0	43	23	0	0	0	11	61	0	0	0	0	138
8:15	0	35	23	0	0	0	11	81	0	0	0	0	150
8:30	0	46	17	0	0	0	12	68	0	0	0	0	143
8:45	0	60	24	0	0	0	9	66	0	0	0	0	159
9:00	0	59	25	0	0	0	10	67	0	0	0	0	161
9:15	0	46	23	0	0	0	9	62	0	0	0	0	140
9:30	0	48	23	0	0	0	16	56	0	0	0	0	143
9:45	0	49	34	0	0	0	20	50	0	0	0	0	153

Total Volume:	0	502	255	0	0	0	137	664	0	0	0	0	1558
Approach %	0%	66%	34%	0%	0%	0%	17%	83%	0%	0%	0%	0%	

Peak Hr Begin:	8:15												
PHV	0	200	89	0	0	0	42	282	0	0	0	0	613
PHF	0.860			0.000			0.880			0.000			0.952

Turning Movement Count Report PM

Location ID: 1 Unsignalized
 North/South: Argyle Ave
 East/West: US-101 SB On-ramp

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	0	29	13	0	0	0	40	117	0	0	0	0	199
15:15	0	34	15	0	0	0	13	114	0	0	0	0	176
15:30	0	29	17	0	0	0	11	119	0	0	0	0	176
15:45	0	31	20	0	0	0	25	131	0	0	0	0	207
16:00	0	25	15	0	0	0	16	123	0	0	0	0	179
16:15	0	22	23	0	0	0	18	121	0	0	0	0	184
16:30	0	22	21	0	0	0	12	141	0	0	0	0	196
16:45	0	39	13	0	0	0	16	147	0	0	0	0	215
17:00	0	29	18	0	0	0	24	147	0	0	0	0	218
17:15	0	25	18	0	0	0	22	175	0	0	0	0	240
17:30	0	23	21	0	0	0	15	178	0	0	0	0	237
17:45	0	44	16	0	0	0	27	161	0	0	0	0	248

Total Volume:	0	352	210	0	0	0	239	1674	0	0	0	0	2475
Approach %	0%	63%	37%	0%	0%	0%	12%	88%	0%	0%	0%	0%	

Peak Hr Begin:	17:00												
PHV	0	121	73	0	0	0	88	661	0	0	0	0	943
PHF	0.808			0.000			0.951			0.000			0.951

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	0	0	14	0	0	0	0	0
7:15	0	0	13	0	0	0	0	0
7:30	0	0	14	0	0	0	0	0
7:45	2	1	15	0	0	0	0	0
8:00	0	1	9	0	0	0	0	0
8:15	2	0	17	0	1	0	0	0
8:30	1	2	3	0	0	0	0	0
8:45	1	2	16	0	0	0	0	0
9:00	0	0	15	0	0	0	0	0
9:15	0	0	6	0	0	0	0	0
9:30	0	1	14	0	1	0	0	0
9:45	0	1	14	0	0	0	0	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	0	15	0	0	0	0	0
15:15	0	0	16	0	0	0	0	0
15:30	0	1	25	0	0	0	0	0
15:45	0	0	23	0	0	0	0	0
16:00	0	0	17	0	0	0	0	0
16:15	1	0	15	0	0	0	0	0
16:30	0	0	14	0	0	0	0	0
16:45	0	0	17	0	0	0	0	0
17:00	0	0	42	0	1	1	0	0
17:15	0	0	13	0	0	0	0	0
17:30	1	0	22	0	0	0	0	0
17:45	0	0	20	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 2 Unsignalized
 North/South: Gower St
 East/West: US-101 NB Off-ramp

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	69	0	17	0	35	0	92	0	0	0	0	213
7:15	0	73	0	16	0	28	0	105	0	0	0	0	222
7:30	0	104	0	19	0	38	0	128	0	0	0	0	289
7:45	0	93	0	25	0	45	0	138	0	0	0	0	301
8:00	0	104	0	18	0	32	0	120	0	0	0	0	274
8:15	0	91	0	17	0	49	0	126	0	0	0	0	283
8:30	0	119	0	21	0	44	0	128	0	0	0	0	312
8:45	0	104	0	26	0	43	0	142	0	0	0	0	315
9:00	0	98	0	23	0	52	0	136	0	0	0	0	309
9:15	0	112	0	25	0	45	0	94	0	0	0	0	276
9:30	0	95	0	31	0	49	0	106	0	0	0	0	281
9:45	0	99	0	35	0	55	0	118	0	0	0	0	307

Total Volume:	0	1161	0	273	0	515	0	1433	0	0	0	0	3382
Approach %	0%	100%	0%	35%	0%	65%	0%	100%	0%	#DIV/0!	#DIV/0!	#DIV/0!	

Peak Hr Begin:	8:15												
PHV	0	412	0	87	0	188	0	532	0	0	0	0	1219
PHF	0.866			0.917			0.937			#DIV/0!			0.967

Turning Movement Count Report PM

Location ID: 2 Unsignalized
 North/South: Gower St
 East/West: US-101 NB Off-ramp

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	0	71	0	27	0	21	0	180	0	0	0	0	299
15:15	0	60	0	42	0	15	0	183	0	0	0	0	300
15:30	0	80	0	28	0	19	0	189	0	0	0	0	316
15:45	0	70	0	23	0	22	0	198	0	0	0	0	313
16:00	0	63	0	27	0	13	0	205	0	0	0	0	308
16:15	0	64	0	18	0	8	0	237	0	0	0	0	327
16:30	0	63	0	25	0	17	0	187	0	0	0	0	292
16:45	0	76	0	18	0	13	0	275	0	0	0	0	382
17:00	0	58	0	31	0	10	0	231	0	0	0	0	330
17:15	0	63	0	21	0	15	0	251	0	0	0	0	350
17:30	0	77	0	12	0	10	0	254	0	0	0	0	353
17:45	0	61	0	18	0	9	0	257	0	0	0	0	345

Total Volume:	0	806	0	290	0	172	0	2647	0	0	0	0	3915
Approach %	0%	100%	0%	63%	0%	37%	0%	100%	0%	#DIV/0!	#DIV/0!	#DIV/0!	

Peak Hr Begin:	16:45												
PHV	0	274	0	82	0	48	0	1011	0	0	0	0	1415
PHF	0.890			0.793			0.919			#DIV/0!			0.926

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	0	1	7	0	0	0	0	0
7:15	0	0	9	0	0	0	0	0
7:30	0	0	9	0	0	0	0	0
7:45	0	0	13	0	1	0	0	0
8:00	0	2	19	0	0	0	0	0
8:15	0	1	4	0	0	0	0	0
8:30	0	1	8	0	0	1	0	0
8:45	0	0	7	0	0	0	0	0
9:00	0	1	6	0	0	0	0	0
9:15	0	1	4	0	0	0	0	0
9:30	0	0	4	0	0	0	0	0
9:45	0	0	5	0	0	0	0	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	0	13	0	0	0	0	0
15:15	0	0	11	0	0	0	0	0
15:30	0	4	8	0	0	0	0	0
15:45	0	0	4	0	0	2	0	0
16:00	0	0	10	0	0	3	0	0
16:15	0	0	11	0	0	1	0	0
16:30	0	0	9	0	0	0	0	0
16:45	0	0	10	0	0	0	0	0
17:00	0	0	15	0	0	0	0	0
17:15	0	0	10	0	0	0	0	0
17:30	0	1	17	0	0	0	0	0
17:45	0	0	6	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 3 Unsignalized
 North/South: Gower St
 East/West: US-101 SB Off-ramp / Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	101	3	0	0	0	1	50	0	72	2	39	268
7:15	0	91	8	0	0	0	5	59	0	89	1	46	299
7:30	0	134	4	0	0	0	3	76	0	71	2	51	341
7:45	0	130	8	0	0	0	2	75	0	118	2	64	399
8:00	0	133	6	0	0	0	2	77	0	103	3	44	368
8:15	0	130	6	0	0	0	6	75	0	132	2	48	399
8:30	0	157	5	0	0	0	4	72	0	140	6	59	443
8:45	0	143	7	0	0	0	11	80	0	140	6	63	450
9:00	0	144	6	0	0	0	7	108	0	131	10	40	446
9:15	0	153	3	0	0	0	5	67	0	107	10	41	386
9:30	0	137	5	0	0	0	0	73	0	100	4	40	359
9:45	0	149	5	0	0	0	0	75	0	111	4	44	388

Total Volume:	0	1602	66	0	0	0	46	887	0	1314	52	579	4546
Approach %	0%	96%	4%	#DIV/0!	#DIV/0!	#DIV/0!	5%	95%	0%	68%	3%	30%	

Peak Hr Begin:	8:15												
PHV	0	574	24	0	0	0	28	335	0	543	24	210	1738
PHF	0.923			#DIV/0!			0.789			0.929			0.966

Turning Movement Count Report PM

Location ID: 3 Unsignalized
 North/South: Gower St
 East/West: US-101 SB Off-ramp / Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	0	90	2	0	0	0	7	145	0	57	0	45	346
15:15	0	76	2	0	0	0	3	128	0	50	15	53	327
15:30	0	65	23	0	0	0	4	147	0	48	10	48	345
15:45	0	88	2	0	0	0	1	142	0	65	3	53	354
16:00	0	72	1	0	0	0	6	158	0	67	2	55	361
16:15	0	67	2	0	0	0	5	168	0	49	4	66	361
16:30	0	78	2	0	0	0	3	149	0	77	5	60	374
16:45	0	81	4	0	0	0	0	179	0	73	5	83	425
17:00	0	68	0	0	0	0	1	170	0	51	4	49	343
17:15	0	78	2	0	0	0	6	194	0	74	2	66	422
17:30	0	82	5	0	0	0	8	180	0	76	2	68	421
17:45	0	62	1	0	0	0	8	190	0	79	5	70	415

Total Volume:	0	907	46	0	0	0	52	1950	0	766	57	716	4494
Approach %	0%	95%	5%	#DIV/0!	#DIV/0!	#DIV/0!	3%	97%	0%	50%	4%	47%	

Peak Hr Begin:	16:45												
PHV	0	309	11	0	0	0	15	723	0	274	13	266	1611
PHF	0.920			#DIV/0!			0.923			0.859			0.948

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	1	1	9	0	0	0	1	0
7:15	0	0	11	0	1	0	2	0
7:30	0	0	12	0	0	0	3	0
7:45	1	0	17	0	0	0	7	0
8:00	0	2	18	0	0	0	4	0
8:15	0	1	5	0	0	0	2	0
8:30	0	1	13	0	0	0	0	0
8:45	0	0	8	0	0	0	2	0
9:00	0	1	16	0	1	0	3	0
9:15	0	1	9	0	0	0	1	0
9:30	0	0	15	0	0	0	2	0
9:45	0	0	12	0	1	0	1	0

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	0	14	0	0	0	5	0
15:15	0	0	12	0	1	1	3	0
15:30	0	4	8	0	0	1	5	0
15:45	1	0	7	0	0	3	1	0
16:00	0	0	9	0	0	4	1	0
16:15	0	0	8	0	0	1	2	0
16:30	0	0	8	0	0	0	4	0
16:45	0	0	10	0	0	0	1	0
17:00	0	0	18	0	0	0	0	0
17:15	0	0	9	0	0	1	5	0
17:30	0	1	14	0	0	0	6	0
17:45	0	0	10	0	0	0	5	0

Turning Movement Count Report AM

Location ID: 4 Unsignalized
 North/South: Gower St
 East/West: Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	10	198	0	0	0	0	0	39	0	2	0	0	249
7:15	12	229	0	0	0	0	0	68	2	6	0	1	318
7:30	15	202	0	0	0	0	0	62	2	6	0	0	287
7:45	19	221	0	0	0	0	0	77	3	1	0	2	323
8:00	35	223	0	0	0	0	0	87	1	3	0	1	350
8:15	29	209	0	0	0	0	0	84	0	4	0	4	330
8:30	40	216	0	0	0	0	0	96	5	5	0	3	365
8:45	48	261	0	0	0	0	0	78	5	8	0	3	403
9:00	46	209	0	0	0	0	0	84	7	4	0	2	352
9:15	32	199	0	0	0	0	0	90	8	5	0	2	336
9:30	27	202	0	0	0	0	0	66	2	4	0	3	304
9:45	39	218	0	0	0	0	0	65	5	6	0	3	336

Total Volume:	352	2587	0	0	0	0	0	896	40	54	0	24	3953
Approach %	12%	88%	0%	0%	0%	0%	0%	96%	4%	69%	0%	31%	

Peak Hr Begin:	8:30												
PHV	166	885	0	0	0	0	0	348	25	22	0	10	1456
PHF	0.850			0.000			0.923			0.727			0.903

Turning Movement Count Report PM

Location ID: 4 Unsignalized
 North/South: Gower St
 East/West: Yucca St

Date: 05/12/15
 City: Hollywood, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	6	134	0	0	0	0	0	132	4	4	0	7	287
15:15	14	139	0	0	0	0	0	147	2	7	0	6	315
15:30	9	139	0	0	0	0	0	133	6	8	0	12	307
15:45	12	132	0	0	0	0	0	135	7	11	0	5	302
16:00	14	141	0	0	0	0	0	140	14	11	0	7	327
16:15	9	111	0	0	0	0	0	143	5	13	0	6	287
16:30	13	113	0	0	0	0	0	181	12	6	0	9	334
16:45	17	110	0	0	0	0	0	148	12	6	0	9	302
17:00	9	139	0	0	0	0	0	202	18	11	0	12	391
17:15	10	137	0	0	0	0	0	189	18	12	0	13	379
17:30	8	127	0	0	0	0	0	171	21	11	0	13	351
17:45	17	128	0	0	0	0	0	178	23	12	0	5	363

Total Volume:	138	1550	0	0	0	0	0	1899	142	112	0	104	3945
Approach %	8%	92%	0%	0%	0%	0%	0%	93%	7%	52%	0%	48%	

Peak Hr Begin:	17:00												
PHV	44	531	0	0	0	0	0	740	80	46	0	43	1484
PHF	0.971			0.000			0.932			0.890			0.949

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	1	0	0	0	0	0	0	0
7:15	0	2	0	0	0	0	1	0
7:30	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	4	0
8:00	0	0	0	0	2	0	1	0
8:15	1	0	0	0	1	0	1	0
8:30	0	2	0	0	0	0	1	0
8:45	0	0	0	0	0	0	0	0
9:00	0	1	0	0	0	1	1	0
9:15	2	0	0	0	2	0	2	0
9:30	1	2	0	0	1	0	3	0
9:45	0	1	0	0	0	0	1	0

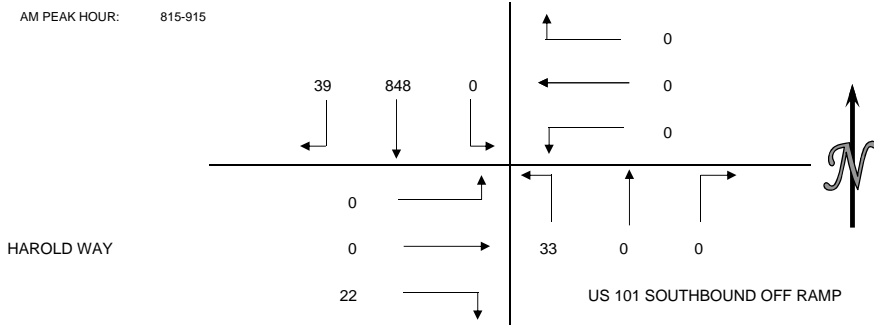
	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	0	0	0	0	0	3	0
15:15	0	1	0	0	0	1	13	0
15:30	0	0	0	0	0	0	4	0
15:45	0	0	0	0	0	0	6	0
16:00	0	1	0	0	0	0	0	0
16:15	2	0	0	0	2	0	1	3
16:30	0	0	0	0	0	0	3	1
16:45	0	0	0	0	0	0	3	0
17:00	0	0	0	0	0	0	5	0
17:15	0	1	0	0	0	0	2	0
17:30	0	0	0	0	0	1	5	0
17:45	0	0	0	0	0	0	14	0

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: THURSDAY NOVEMBER 7, 2013
 PERIOD: 7:00 AM TO 10:00 AM
 INTERSECTION: N/S US 101 SOUTHBOUND OFF-RAMP / VAN NESS AVENUE
 E/W HAROLD WAY
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	0	148	0	0	0	0	0	0	5	6	0	0	159
715-730	3	181	0	0	0	0	0	0	8	5	0	0	197
730-745	7	169	0	0	0	0	0	0	6	5	0	0	187
745-800	8	147	0	0	0	0	0	0	17	10	0	0	182
800-815	9	183	0	0	0	0	0	0	12	8	0	0	212
815-830	14	196	0	0	0	0	0	0	8	6	0	0	224
830-845	8	214	0	0	0	0	0	0	12	5	0	0	239
845-900	11	236	0	0	0	0	0	0	2	7	0	0	256
900-915	6	202	0	0	0	0	0	0	11	4	0	0	223
915-930	7	171	0	0	0	0	0	0	17	6	0	0	201
930-945	1	145	0	0	0	0	0	0	5	5	0	0	156
945-1000	2	149	0	0	0	0	0	0	8	5	0	0	164
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	18	645	0	0	0	0	0	0	36	26	0	0	725
715-815	27	680	0	0	0	0	0	0	43	28	0	0	778
730-830	38	695	0	0	0	0	0	0	43	29	0	0	805
745-845	39	740	0	0	0	0	0	0	49	29	0	0	857
800-900	42	829	0	0	0	0	0	0	34	26	0	0	931
815-915	39	848	0	0	0	0	0	0	33	22	0	0	942
830-930	32	823	0	0	0	0	0	0	42	22	0	0	919
845-945	25	754	0	0	0	0	0	0	35	22	0	0	836
900-1000	16	667	0	0	0	0	0	0	41	20	0	0	744

AM PEAK HOUR: 815-915



PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	2	2	0	0	4
715-730	6	6	0	1	13
730-745	15	14	2	1	32
745-800	14	3	1	6	24
800-815	5	4	0	1	10
815-830	0	0	0	0	0
830-845	0	0	0	2	2
845-900	1	0	0	1	2
900-915	2	0	0	2	4
915-930	2	0	2	2	6
930-945	1	0	0	1	2
945-1000	1	0	0	3	4
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
PERIOD	LEG	LEG	LEG	LEG	TOTAL
700-800	37	25	3	8	73
715-815	40	27	3	9	79
730-830	34	21	3	8	66
745-845	19	7	1	9	36
800-900	6	4	0	4	14
815-915	3	0	0	5	8
830-930	5	0	2	7	14
845-945	6	0	2	6	14
900-1000	6	0	2	8	16

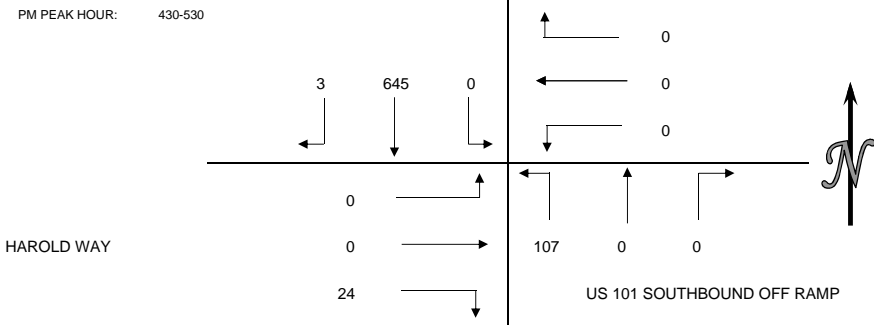
BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	0	0	0	0	0
715-730	0	0	0	0	0
730-745	2	2	0	0	4
745-800	0	0	1	2	3
800-815	0	2	0	0	2
815-830	1	1	0	0	2
830-845	0	0	0	0	0
845-900	0	0	1	0	1
900-915	0	0	0	0	0
915-930	1	2	0	0	3
930-945	0	0	0	1	1
945-1000	0	0	0	0	0
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
PERIOD	LEG	LEG	LEG	LEG	TOTAL
700-800	2	2	1	2	7
715-815	2	4	1	2	9
730-830	3	5	1	2	11
745-845	1	3	1	2	7
800-900	1	3	1	0	5
815-915	1	1	1	0	3
830-930	1	2	1	0	4
845-945	1	2	1	1	5
900-1000	1	2	0	1	4

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: THURSDAY NOVEMBER 7, 2013
 PERIOD: 3:00 PM TO 6:00 PM
 INTERSECTION: N/S US 101 SOUTHBOUND OFF-RAMP
 E/W HAROLD WAY
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	10	112	0	0	0	0	0	0	14	13	0	0	149
315-330	13	139	0	0	0	0	0	0	19	3	0	0	174
330-345	10	148	0	0	0	0	0	0	20	4	0	0	182
345-400	7	164	0	0	0	0	0	0	21	4	0	0	196
400-415	0	129	0	0	0	0	0	0	9	5	0	0	143
415-430	0	143	0	0	0	0	0	0	14	8	0	0	165
430-445	0	153	0	0	0	0	0	0	29	4	0	0	186
445-500	0	176	0	0	0	0	0	0	19	5	0	0	200
500-515	0	160	0	0	0	0	0	0	34	9	0	0	203
515-530	3	156	0	0	0	0	0	0	25	6	0	0	190
530-545	1	141	0	0	0	0	0	0	31	10	0	0	183
545-600	0	150	0	0	0	0	0	0	19	5	0	0	174
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	40	563	0	0	0	0	0	0	74	24	0	0	701
315-415	30	580	0	0	0	0	0	0	69	16	0	0	695
330-430	17	584	0	0	0	0	0	0	64	21	0	0	686
345-445	7	589	0	0	0	0	0	0	73	21	0	0	690
400-500	0	601	0	0	0	0	0	0	71	22	0	0	694
415-515	0	632	0	0	0	0	0	0	96	26	0	0	754
430-530	3	645	0	0	0	0	0	0	107	24	0	0	779
445-545	4	633	0	0	0	0	0	0	109	30	0	0	776
500-600	4	607	0	0	0	0	0	0	109	30	0	0	750

PM PEAK HOUR: 430-530



PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	7	0	2	1	10
315-330	1	0	0	2	3
330-345	4	0	1	0	5
345-400	0	0	2	0	2
400-415	3	0	0	0	3
415-430	0	0	1	0	1
430-445	1	0	0	2	3
445-500	0	0	0	2	2
500-515	2	0	0	0	2
515-530	2	0	0	0	2
530-545	7	1	0	1	9
545-600	4	0	0	0	4
HOUR TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	12	0	5	3	20
315-415	8	0	3	2	13
330-430	7	0	4	0	11
345-445	4	0	3	2	9
400-500	4	0	1	4	9
415-515	3	0	1	4	8
430-530	5	0	0	4	9
445-545	11	1	0	3	15
500-600	15	1	0	1	17

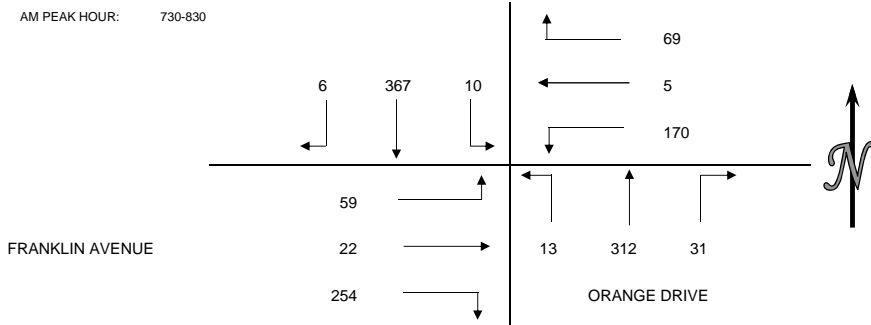
BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	0	0	3	0	3
315-330	0	0	0	1	1
330-345	1	0	0	0	1
345-400	0	0	0	0	0
400-415	1	0	0	0	1
415-430	1	0	0	0	1
430-445	1	0	0	0	1
445-500	0	0	0	0	0
500-515	1	0	0	0	1
515-530	0	0	0	0	0
530-545	0	0	0	0	0
545-600	1	0	0	0	1
HOUR TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	1	0	3	1	5
315-415	2	0	0	1	3
330-430	3	0	0	0	3
345-445	3	0	0	0	3
400-500	3	0	0	0	3
415-515	3	0	0	0	3
430-530	2	0	0	0	2
445-545	1	0	0	0	1
500-600	2	0	0	0	2

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 13 2015
 PERIOD: 7:00AM-10:00AM
 INTERSECTION: N/S WILTON PLACE
 E/W HAROLD WAY
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	1	54	3	5	1	23	3	95	2	50	10	10	257
715-730	2	60	2	7	0	25	3	77	2	50	7	11	246
730-745	2	76	0	16	0	38	9	84	1	69	9	11	315
745-800	2	76	3	18	2	41	10	65	5	69	6	9	306
800-815	2	99	5	20	3	49	9	88	2	76	5	29	387
815-830	0	116	2	15	0	42	3	75	5	40	2	10	310
830-845	1	101	2	9	3	36	4	87	3	39	4	3	292
845-900	1	111	3	4	2	34	5	91	0	32	4	4	291
900-915	2	112	3	2	0	17	1	83	1	40	6	7	274
915-930	2	106	2	4	0	11	4	80	4	41	3	10	267
930-945	3	117	9	8	0	14	1	86	7	46	3	6	300
945-1000	3	92	6	6	1	8	4	81	3	56	3	15	278
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	7	266	8	46	3	127	25	321	10	238	32	41	1124
715-815	8	311	10	61	5	153	31	314	10	264	27	60	1254
730-830	6	367	10	69	5	170	31	312	13	254	22	59	1318
745-845	5	392	12	62	8	168	26	315	15	224	17	51	1295
800-900	4	427	12	48	8	161	21	341	10	187	15	46	1280
815-915	4	440	10	30	5	129	13	336	9	151	16	24	1167
830-930	6	430	10	19	5	98	14	341	8	152	17	24	1124
845-945	8	446	17	18	2	76	11	340	12	159	16	27	1132
900-1000	10	427	20	20	1	50	10	330	15	183	15	38	1119

AM PEAK HOUR: 730-830



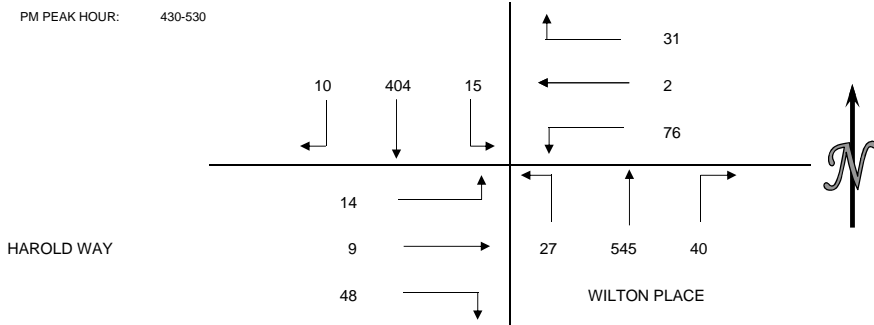
PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	8	10	0	11	29
715-730	15	27	0	7	49
730-745	12	26	0	5	43
745-800	46	59	0	0	105
800-815	13	39	0	8	60
815-830	13	13	0	10	36
830-845	5	9	0	2	16
845-900	3	2	0	5	10
900-915	4	2	0	5	11
915-930	4	6	0	1	11
930-945	6	5	0	0	11
945-1000	5	5	0	3	13
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	81	122	0	23	226
715-815	86	151	0	20	257
730-830	84	137	0	23	244
745-845	77	120	0	20	217
800-900	34	63	0	25	122
815-915	25	26	0	22	73
830-930	16	19	0	13	48
845-945	17	15	0	11	43
900-1000	19	18	0	9	46

BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-715	0	0	1	2	3
715-730	0	0	0	1	1
730-745	0	0	0	0	0
745-800	0	0	0	0	0
800-815	0	0	0	1	1
815-830	1	0	0	1	2
830-845	0	0	0	1	1
845-900	0	0	0	0	0
900-915	0	0	0	0	0
915-930	0	0	0	0	0
930-945	0	0	0	0	0
945-1000	1	0	0	2	3
HOURLY TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	0	0	1	3	4
715-815	0	0	0	2	2
730-830	1	0	0	2	3
745-845	1	0	0	3	4
800-900	1	0	0	3	4
815-915	1	0	0	2	3
830-930	0	0	0	1	1
845-945	0	0	0	0	0
900-1000	1	0	0	2	3

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING, INC.
 PROJECT: HOLLYWOOD TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 13 2015
 PERIOD: 3:00 PM TO 6:00 PM
 INTERSECTION: N/S WILTON PLACE
 E/W HAROLD WAY
 CITY: HOLLYWOOD

VEHICLE COUNTS													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	2	94	1	9	4	12	6	115	8	35	2	10	298
315-330	1	79	6	6	0	16	8	127	10	20	7	11	291
330-345	1	81	2	8	0	17	7	123	8	20	2	3	272
345-400	1	99	3	16	0	13	13	132	5	18	6	8	314
400-415	5	81	2	8	3	17	5	126	9	17	1	12	286
415-430	1	103	1	9	1	12	9	136	9	14	3	5	303
430-445	3	95	7	11	0	14	11	134	4	18	5	3	305
445-500	1	107	3	9	0	21	10	117	7	13	1	3	292
500-515	3	88	2	3	2	16	11	141	6	11	3	7	293
515-530	3	114	3	8	0	25	8	153	10	6	0	1	331
530-545	3	104	4	6	3	24	11	122	2	8	0	10	297
545-600	5	83	4	9	2	15	9	140	10	16	2	5	300
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	5	353	12	39	4	58	34	497	31	93	17	32	1175
315-415	8	340	13	38	3	63	33	508	32	75	16	34	1163
330-430	8	364	8	41	4	59	34	517	31	69	12	28	1175
345-445	10	378	13	44	4	56	38	528	27	67	15	28	1208
400-500	10	386	13	37	4	64	35	513	29	62	10	23	1186
415-515	8	393	13	32	3	63	41	528	26	56	12	18	1193
430-530	10	404	15	31	2	76	40	545	27	48	9	14	1221
445-545	10	413	12	26	5	86	40	533	25	38	4	21	1213
500-600	14	389	13	26	7	80	39	556	28	41	5	23	1221



PEDESTRIAN COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	7	26	0	12	45
315-330	10	17	0	10	37
330-345	6	16	0	6	28
345-400	9	14	0	15	38
400-415	10	18	1	14	43
415-430	10	21	1	5	37
430-445	3	4	0	10	17
445-500	8	11	0	6	25
500-515	10	12	0	3	25
515-530	16	13	0	6	35
530-545	8	21	0	12	41
545-600	10	11	0	9	30
HOUR TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	32	73	0	43	148
315-415	35	65	1	45	146
330-430	35	69	2	40	146
345-445	32	57	2	44	135
400-500	31	54	2	35	122
415-515	31	48	1	24	104
430-530	37	40	0	25	102
445-545	42	57	0	27	126
500-600	44	57	0	30	131

BICYCLE COUNTS					
15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-315	0	0	0	0	0
315-330	0	3	0	0	3
330-345	0	1	0	0	1
345-400	0	2	0	0	2
400-415	0	1	0	1	2
415-430	2	3	0	0	5
430-445	0	1	0	1	2
445-500	0	0	0	0	0
500-515	0	1	0	2	3
515-530	1	0	0	3	4
530-545	0	0	0	3	3
545-600	0	2	0	1	3
HOUR TOTALS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
300-400	0	6	0	0	6
315-415	0	7	0	1	8
330-430	2	7	0	1	10
345-445	2	7	0	2	11
400-500	2	5	0	2	9
415-515	2	5	0	3	10
430-530	1	2	0	6	9
445-545	1	1	0	8	10
500-600	1	3	0	9	13

Turning Movement Count Report AM

Location ID: 7 Unsignalized
 North/South: US 101 SB On-ramp
 East/West: Sunset Boulevard

Date: 11/10/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	0	0	0	473	11	0	0	0	77	236	0	797
7:15	0	0	0	0	501	10	0	0	0	64	329	0	904
7:30	0	0	0	0	501	12	0	0	0	53	380	0	946
7:45	0	0	0	0	457	14	0	0	0	63	377	0	911
8:00	0	0	0	0	495	12	0	0	0	56	362	0	925
8:15	0	0	0	0	470	18	0	0	0	65	294	0	847
8:30	0	0	0	0	513	16	0	0	0	64	284	0	877
8:45	0	0	0	0	494	13	0	0	0	67	281	0	855
9:00	0	0	0	0	440	24	0	0	0	65	249	0	778
9:15	0	0	0	0	380	22	0	0	0	75	273	0	750
9:30	0	0	0	0	403	15	0	0	0	74	217	0	709
9:45	0	0	0	0	392	15	0	0	0	70	255	0	732

Total Volume:	0	0	0	0	5519	182	0	0	0	793	3537	0	10031
Approach %	0%	0%	0%	0%	97%	3%	0%	0%	0%	18%	82%	0%	

Peak Hr Begin:	7:15												
PHV	0	0	0	0	1954	48	0	0	0	236	1448	0	3686
PHF	0.000			0.976			0.000			0.957			0.974

Turning Movement Count Report PM

Location ID: 7 Unsignalized
 North/South: US 101 SB On-ramp
 East/West: Sunset Boulevard

Date: 11/10/16
 City: Los Angeles, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	0	0	0	0	342	14	0	0	0	108	410	0	874
15:15	0	0	0	0	316	12	0	0	0	83	460	0	871
15:30	0	0	0	0	339	6	0	0	0	123	404	0	872
15:45	0	0	0	0	327	13	0	0	0	115	420	0	875
16:00	0	0	0	0	354	9	0	0	0	123	419	0	905
16:15	0	0	0	0	334	3	0	0	0	82	430	0	849
16:30	0	0	0	0	394	6	0	0	0	107	493	0	1000
16:45	0	0	0	0	372	11	0	0	0	80	486	0	949
17:00	0	0	0	0	361	8	0	0	0	86	468	0	923
17:15	0	0	0	0	370	7	0	0	0	80	490	0	947
17:30	0	0	0	0	380	11	0	0	0	90	487	0	968
17:45	0	0	0	0	408	14	0	0	0	79	505	0	1006

Total Volume:	0	0	0	0	4297	114	0	0	0	1156	5472	0	11039
Approach %	0%	0%	0%	0%	97%	3%	0%	0%	0%	17%	83%	0%	

Peak Hr Begin:	17:00												
PHV	0	0	0	0	1519	40	0	0	0	335	1950	0	3844
PHF	0.000			0.924			0.000			0.978			0.955

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
7:00	0	0	0	0	4	0	0	0
7:15	0	0	0	0	14	0	0	0
7:30	0	0	0	0	4	0	0	0
7:45	0	0	0	0	15	0	0	0
8:00	0	0	0	0	7	1	0	0
8:15	0	0	0	0	5	0	0	0
8:30	0	0	0	0	5	2	0	0
8:45	0	0	0	0	3	0	0	0
9:00	0	0	0	0	1	1	0	0
9:15	0	0	0	0	1	0	0	0
9:30	0	0	0	0	10	2	0	0
9:45	0	0	0	0	1	0	0	0

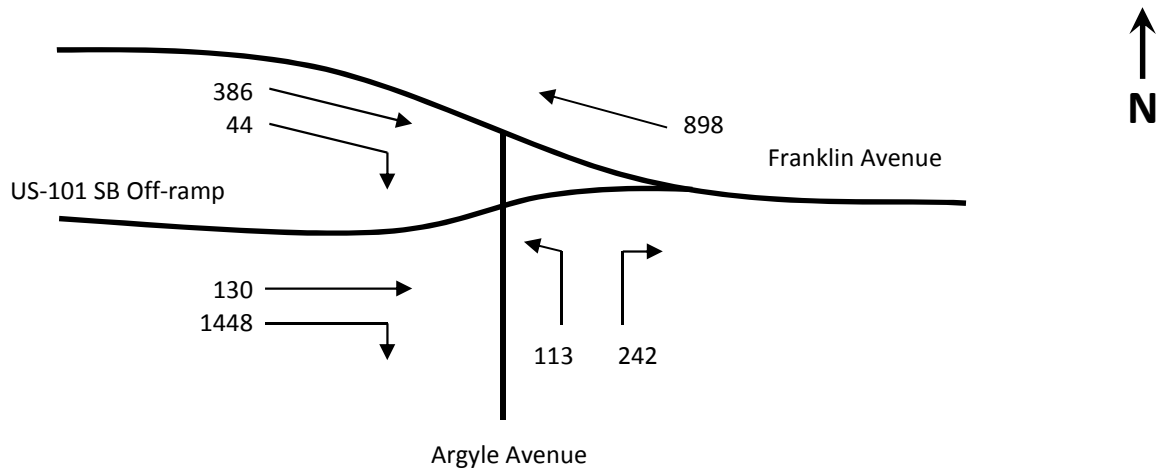
	North		East		South		West	
Leg:	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle	Peds	Bicycle
15:00	0	0	0	0	24	0	0	0
15:15	0	0	0	0	7	2	0	0
15:30	0	0	0	0	7	0	0	0
15:45	0	0	0	0	17	0	0	0
16:00	0	0	0	0	13	2	0	0
16:15	0	0	0	0	9	2	0	0
16:30	0	0	0	0	11	1	0	0
16:45	0	0	0	0	6	0	0	0
17:00	0	0	0	0	9	0	0	0
17:15	0	0	0	0	7	0	0	0
17:30	0	0	0	0	4	0	0	0
17:45	0	0	0	0	0	0	0	0

Appendix D

Level of Service Worksheets

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Existing Conditions - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{898}{2} = 449 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{386}{2} = 193 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 130$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{449}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{113 + 242}{2} = \frac{355}{2} = 178 \quad \text{or}$$

$$\text{Northbound Right: } 242 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 44$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{178}$$

$$\text{Critical Volume: } 449 + 178 = \mathbf{627}$$

$$\text{Intersection V/C: } \frac{627}{1500} = \mathbf{0.418}$$

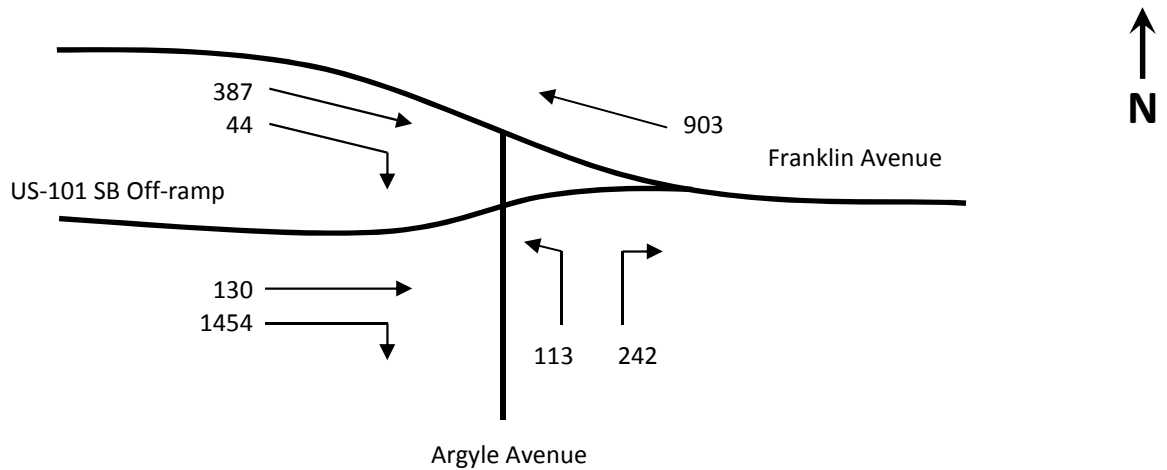
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.318}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Existing with Project Conditions - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{903}{2} = 452 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{387}{2} = 194 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 130$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{452}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{113 + 242}{2} = \frac{355}{2} = 178 \quad \text{or}$$

$$\text{Northbound Right: } 242 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 44$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{178}$$

$$\text{Critical Volume: } 452 + 178 = \mathbf{630}$$

$$\text{Intersection V/C: } \frac{630}{1500} = \mathbf{0.42}$$

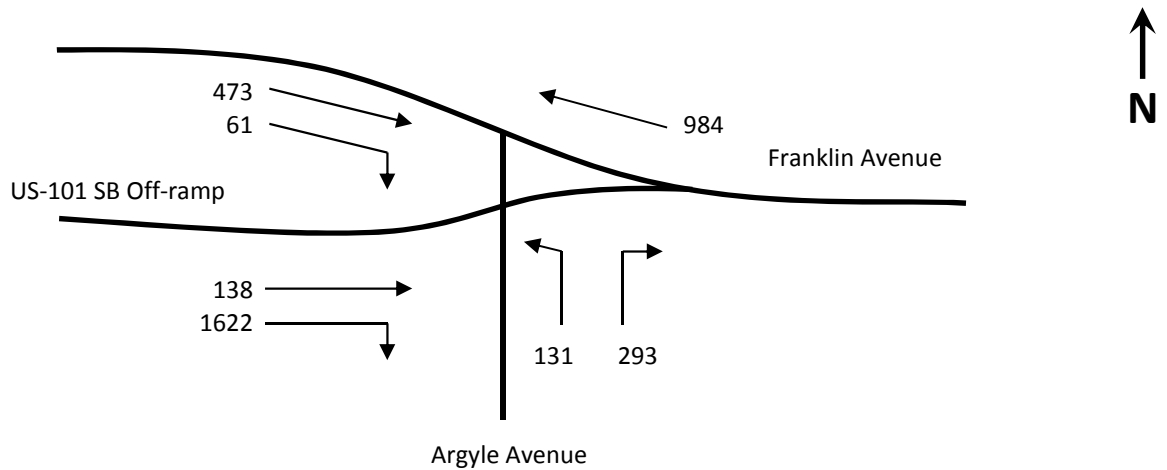
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.320}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Future without Project Conditions (Year 2023) - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{984}{2} = 492 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{473}{2} = 237 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 138$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{492}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{131 + 293}{2} = \frac{424}{2} = 212 \quad \text{or}$$

$$\text{Northbound Right: } 293 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 61$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{212}$$

$$\text{Critical Volume: } 492 + 212 = \mathbf{704}$$

$$\text{Intersection V/C: } \frac{704}{1500} = \mathbf{0.469}$$

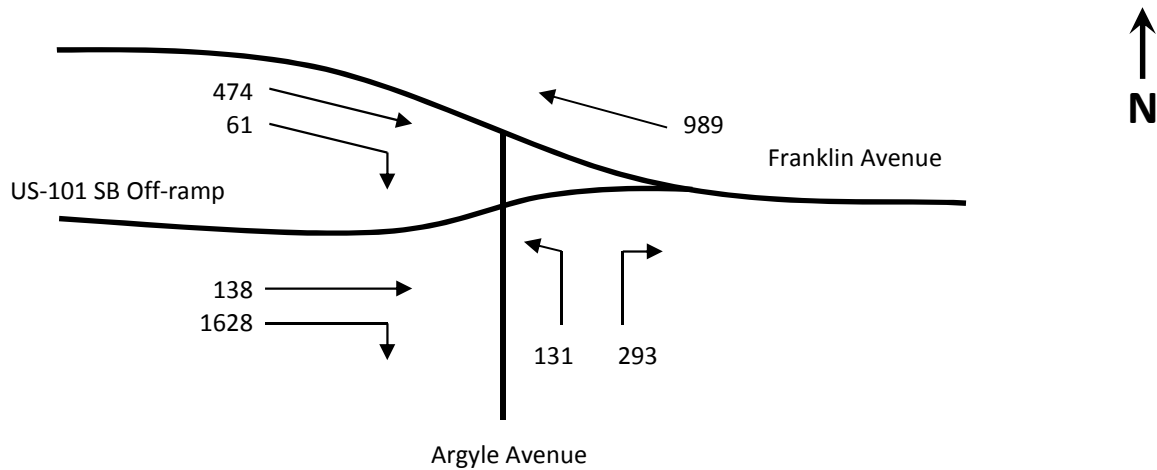
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.369}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Future with Project Conditions (Year 2023) - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through:} \quad \frac{989}{2} = 495 \quad \text{or}$$

$$\text{Eastbound Through (Franklin):} \quad \frac{474}{2} = 237 \quad \text{or}$$

$$\text{Eastbound Through (US-101):} \quad 138$$

$$\text{Critical Volume \#1 (CV1):} \quad \mathbf{495}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right:} \quad \frac{131 + 293}{2} = \frac{424}{2} = 212 \quad \text{or}$$

$$\text{Northbound Right:} \quad 293 \quad \text{or}$$

$$\text{Eastbound Right (Franklin):} \quad 61$$

$$\text{Critical Volume \#2 (CV2):} \quad \mathbf{212}$$

$$\text{Critical Volume:} \quad 495 + 212 = \mathbf{707}$$

$$\text{Intersection V/C:} \quad \frac{707}{1500} = \mathbf{0.471}$$

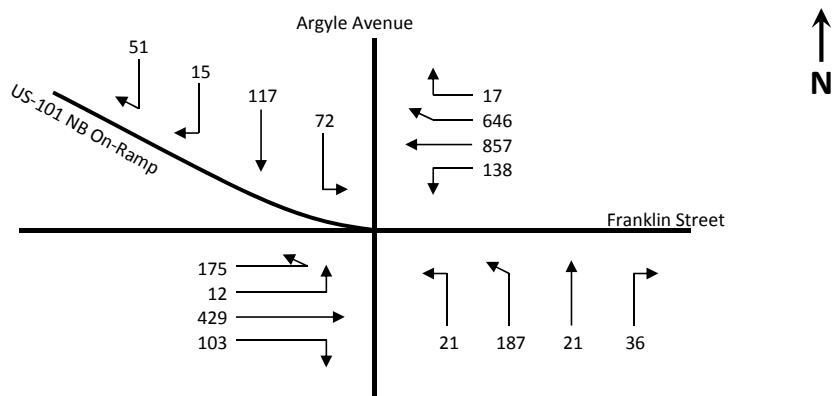
$$\text{ATSAC/ATCS Credit:} \quad 0.10$$

$$\text{Final intersection V/C:} \quad \mathbf{0.371}$$

$$\text{Intersection LOS:} \quad \mathbf{A}$$

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Existing Conditions - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $175 + 12 = 187$ and

Westbound Throughs + Rights:

$$\frac{857 + 646 + 17}{2} = \frac{1520}{2} = 760 \quad \text{or}$$

Westbound Rights: $646 + 17 = 663$ or

Westbound Lefts: 138 and

Eastbound Throughs: $\frac{429}{2} = 215$ or

Eastbound Rights: 103

Critical Volume #1 (CV1): **947**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{21 + 187 + 21}{2} = \frac{229}{2} = 115 \quad \text{or}$$

Northbound Rights: $36 - 0.5 \times \text{WBL} = 0$

Critical Volume #2 (CV2): **115**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 72 or

Southbound Throughs + Rights:

$$\frac{117 + 15 + 51}{2} = \frac{183}{2} = 92 \quad \text{or}$$

Southbound Rights: $15 + 51 = 66$

Critical Volume #3 (CV3): **92**

Critical Volume: $947 + 115 + 92 = 1154$

Intersection V/C: $\frac{1154}{1375} = 0.839$

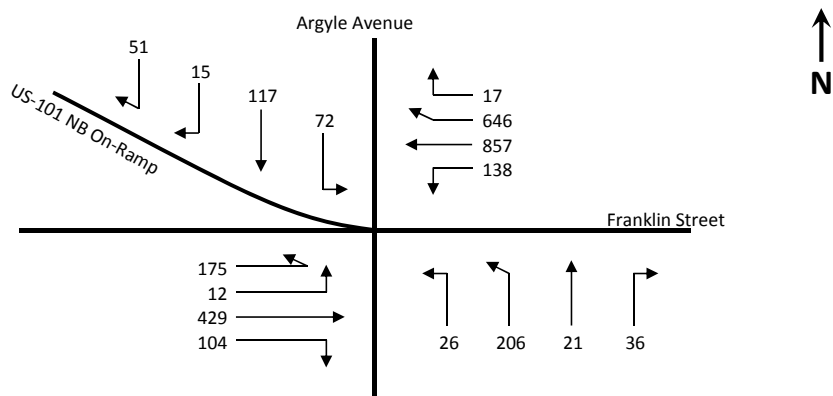
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.739**

Intersection LOS: **C**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Existing with Project Conditions - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $175 + 12 = 187$ and

Westbound Throughs + Rights:

$$\frac{857 + 646 + 17}{2} = \frac{1520}{2} = 760 \quad \text{or}$$

Westbound Rights: $646 + 17 = 663$ or

Westbound Lefts: 138 and

Eastbound Throughs: $\frac{429}{2} = 215$ or

Eastbound Rights: 104

Critical Volume #1 (CV1): **947**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{26 + 206 + 21}{2} = \frac{253}{2} = 127 \quad \text{or}$$

Northbound Rights: $36 - 0.5 \times \text{WBL} = 0$

Critical Volume #2 (CV2): **127**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 72 or

Southbound Throughs + Rights:

$$\frac{117 + 15 + 51}{2} = \frac{183}{2} = 92 \quad \text{or}$$

Southbound Rights: $15 + 51 = 66$

Critical Volume #3 (CV3): **92**

Critical Volume: $947 + 127 + 92 = 1166$

Intersection V/C: $\frac{1166}{1375} = 0.848$

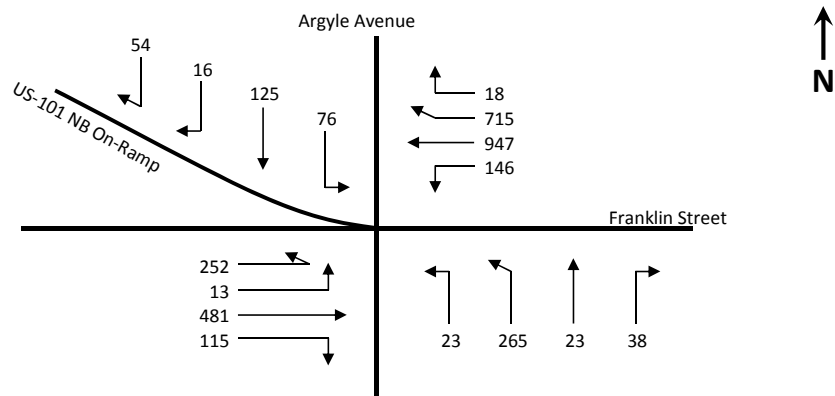
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.748**

Intersection LOS: **C**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Future without Project Conditions (Year 2023) - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $252 + 13 = 265$ and

Westbound Throughs + Rights:

$$\frac{947 + 715 + 18}{2} = \frac{1680}{2} = 840 \quad \text{or}$$

Westbound Rights: $715 + 18 = 733$ or

Westbound Lefts: 146 and

Eastbound Throughs: $\frac{481}{2} = 241$ or

Eastbound Rights: 115

Critical Volume #1 (CV1): **1105**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{23 + 265 + 23}{2} = \frac{311}{2} = 156 \quad \text{or}$$

Northbound Rights: $38 - 0.5 \times \text{WBL} = 0$

Critical Volume #2 (CV2): **156**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 76 or

Southbound Throughs + Rights:

$$\frac{125 + 16 + 54}{2} = \frac{195}{2} = 98 \quad \text{or}$$

Southbound Rights: $16 + 54 = 70$

Critical Volume #3 (CV3): **98**

Critical Volume: $1105 + 156 + 98 = 1359$

Intersection V/C: $\frac{1359}{1375} = 0.988$

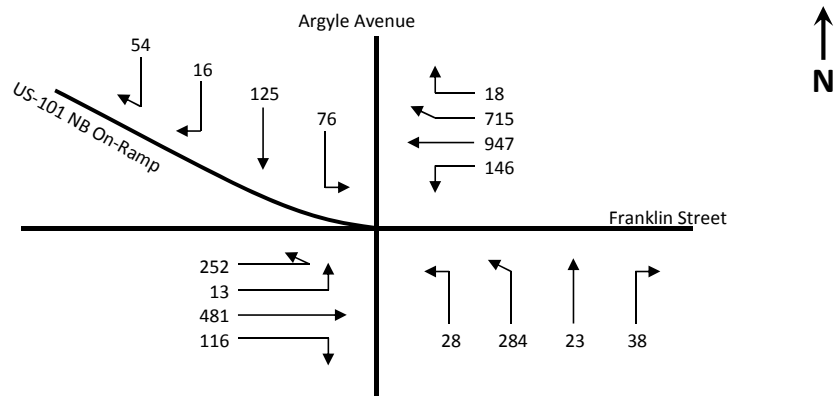
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.888**

Intersection LOS: **D**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Future with Project Conditions (Year 2023) - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $252 + 13 = 265$ and

Westbound Throughs + Rights:

$$\frac{947 + 715 + 18}{2} = \frac{1680}{2} = 840 \quad \text{or}$$

Westbound Rights: $715 + 18 = 733$ or

Westbound Lefts: 146 and

Eastbound Throughs: $\frac{481}{2} = 241$ or

Eastbound Rights: 116

Critical Volume #1 (CV1): **1105**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{28 + 284 + 23}{2} = \frac{335}{2} = 168 \quad \text{or}$$

Northbound Rights: $38 - 0.5 \times \text{WBL} = 0$

Critical Volume #2 (CV2): **168**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 76 or

Southbound Throughs + Rights:

$$\frac{125 + 16 + 54}{2} = \frac{195}{2} = 98 \quad \text{or}$$

Southbound Rights: $16 + 54 = 70$

Critical Volume #3 (CV3): **98**

Critical Volume: $1105 + 168 + 98 = 1371$

Intersection V/C: $\frac{1371}{1375} = 0.997$

ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.897**

Intersection LOS: **D**

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:		Gower St		Year of Count:		2017		Ambient Growth: (%)		1		Conducted by:		GTC		Date:		12/1/2016	
		East-West Street:		Franklin Ave		Projection Year:		2023		Peak Hour:		AM		Reviewed by:				Project:		J1522	
		No. of Phases				4				4				4						4	
		Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1				1				1						1	
		Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0	
		ATSAC-1 or ATSAC+ATCS-2?				2				2				2						2	
		Override Capacity				0				0				0						0	
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	Left	255	1	158	0	255	158	39	310	1	188	0	310	1	188	0	310	1	188		
	Left-Through		1							1				1				1			
	Through	60	0	158	0	60	158	1	65	0	188	0	65	0	188	0	65	0	188		
	Through-Right		0							0				0				0			
	Right	281	1	182	6	287	187	2	300	1	194	6	306	1	199	0	306	1	199		
SOUTHBOUND	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
	Left	18	0	18	0	18	18	0	19	0	19	0	19	0	19	0	19	0	19		
	Left-Through		0							0				0				0			
	Through	146	0	215	0	146	215	4	159	0	232	0	159	0	232	0	159	0	232		
EASTBOUND	Through-Right		0							0				0				0			
	Right	51	0	0	0	51	0	0	54	0	0	0	54	0	0	0	54	0	0		
	Left-Through-Right		1							1				1				1			
	Left-Right		0							0				0				0			
	Left	9	1	9	0	9	9	0	10	1	10	0	10	1	10	0	10	1	10		
WESTBOUND	Left-Through		0							0				0				0			
	Through	489	1	274	0	489	274	26	545	1	304	0	545	1	304	0	545	1	304		
	Through-Right		1							1				1				1			
	Right	58	0	58	0	58	58	0	62	0	62	0	62	0	62	0	62	0	62		
	Left-Through-Right		0							0				0				0			
CRITICAL VOLUMES	Left-Right		0							0				0				0			
	Left	198	1	198	2	200	200	3	213	1	213	2	215	1	215	0	215	1	215		
	Left-Through		0							0				0				0			
	Through	1254	1	630	0	1254	630	27	1358	1	682	0	1358	1	682	0	1358	1	682		
	Through-Right		1							1				1				1			
VOLUME/CAPACITY (V/C) RATIO:	Right	5	0	5	0	5	5	0	5	0	5	0	5	0	5	0	5	0	5		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
	CRITICAL VOLUMES		North-South: 397		East-West: 639		SUM: 1036		North-South: 402		East-West: 639		SUM: 1041		North-South: 426		East-West: 692		SUM: 1118		
	VOLUME/CAPACITY (V/C) RATIO:				0.753				0.757				0.813				0.817				
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.653				0.657				0.713				0.717					
LEVEL OF SERVICE (LOS):				B				B				C				C					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Ivar Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016									
4	East-West Street:	Yucca St	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522									
No. of Phases		2	2		2		2		2										
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0	0		0		0		0										
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0	NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0										
ATSAC-1 or ATSAC+ATCS-2?		EB-- 0 WB-- 0	EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0										
Override Capacity		2	2		2		2		2										
		0	0		0		0		0										
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	29	0	29	0	29	29	0	31	0	31	0	31	0	31	0	31	0	31
	Left-Through	3	0	75	0	3	75	0	3	0	80	0	3	0	80	0	3	0	80
	Through-Right	43	0	0	0	43	0	0	46	0	0	0	46	0	0	0	46	0	0
	Right		1							1				1				1	
	Left-Through-Right		0							0				0				0	
SOUTHBOUND	Left	2	0	2	0	2	2	0	2	0	2	0	2	0	2	0	2	0	2
	Left-Through	10	0	20	0	10	20	0	11	0	21	0	11	0	21	0	11	0	21
	Through-Right	8	0	0	0	8	0	0	8	0	0	0	8	0	0	0	8	0	0
	Right		1							1				1				1	
	Left-Through-Right		0							0				0				0	
EASTBOUND	Left	8	1	8	0	8	8	0	8	1	8	0	8	1	8	0	8	1	8
	Left-Through	63	1	63	0	63	63	44	111	1	111	0	111	1	111	0	111	1	111
	Through-Right	48	1	48	0	48	48	0	51	1	51	0	51	1	51	0	51	1	51
	Right		0							0				0				0	
	Left-Through-Right		0							0				0				0	
WESTBOUND	Left	330	1	330	0	330	330	0	350	1	350	0	350	1	350	0	350	1	350
	Left-Through	175	1	175	0	175	175	29	215	1	215	0	215	1	215	0	215	1	215
	Through-Right	10	1	10	0	10	10	0	11	1	11	0	11	1	11	0	11	1	11
	Right		0							0				0				0	
	Left-Through-Right		0							0				0				0	
CRITICAL VOLUMES		North-South: 77 East-West: 393 SUM: 470	North-South: 77 East-West: 393 SUM: 470		North-South: 82 East-West: 461 SUM: 543		North-South: 82 East-West: 461 SUM: 543		North-South: 82 East-West: 461 SUM: 543		North-South: 82 East-West: 461 SUM: 543								
VOLUME/CAPACITY (V/C) RATIO:		0.313	0.313		0.362		0.362		0.362		0.362								
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.213	0.213		0.262		0.262		0.262		0.262								
LEVEL OF SERVICE (LOS):		A	A		A		A		A		A								

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.000	Δv/c after mitigation:	0.000
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
5	East-West Street:	Yucca St	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	66	1	66	0	66	66	16	86	1	86	0	86	1	86	0	86	1	86	
	Left-Through		0							0				0				0		
	Through	350	1	248	0	350	248	48	420	1	302	0	420	1	302	0	420	1	302	
	Through-Right		1							1				1				1		
	Right	146	0	146	0	146	146	28	183	0	183	0	183	0	183	0	183	0	183	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	100	1	100	0	100	100	0	106	1	106	0	106	1	106	0	106	1	106	
	Left-Through		0							0				0				0		
	Through	1019	1	679	6	1025	682	108	1190	1	775	6	1196	1	778	0	1196	1	778	
	Through-Right		1							1				1				1		
	Right	338	0	338	0	338	338	0	359	0	359	0	359	0	359	0	359	0	359	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	5	1	5	0	5	5	0	5	1	5	0	5	1	5	0	5	1	5	
	Left-Through		0							0				0				0		
	Through	60	1	60	0	60	60	14	78	1	78	0	78	1	78	0	78	1	78	
	Through-Right		0							0				0				0		
	Right	38	1	5	0	38	5	22	62	1	19	0	62	1	19	0	62	1	19	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	78	1	78	0	78	78	33	116	1	116	0	116	1	116	0	116	1	116	
	Left-Through		0							0				0				0		
	Through	135	1	71	0	135	71	8	151	1	79	0	151	1	79	0	151	1	79	
	Through-Right		1							1				1				1		
	Right	7	0	7	0	7	7	0	7	0	7	0	7	0	7	0	7	0	7	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 745 East-West: 138 SUM: 883	North-South: 748 East-West: 138 SUM: 886	North-South: 861 East-West: 194 SUM: 1055	North-South: 864 East-West: 194 SUM: 1058	North-South: 864 East-West: 194 SUM: 1058	North-South: 864 East-West: 194 SUM: 1058	North-South: 864 East-West: 194 SUM: 1058											
VOLUME/CAPACITY (V/C) RATIO:			0.589	0.591	0.703	0.705	0.705	0.705												
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.489	0.491	0.603	0.605	0.605													
LEVEL OF SERVICE (LOS):			A	A	B	B	B													

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016											
6	East-West Street:	Yucca St	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522											
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 1 EB-- 0 WB-- 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0												
			NB-- 0 SB-- 1 EB-- 0 WB-- 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0												
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT			FUTURE CONDITION W/ PROJECT			FUTURE W/ PROJECT W/ MITIGATION						
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	9	0	9	0	9	9	10	20	0	20	0	20	0	20	0	20	0	20	0	20
	Left-Through	143	1	79	24	167	91	45	197	1	119	24	221	1	131	0	221	1	131	0	131
	Through	5	1	79	0	5	91	15	20	1	119	0	20	1	131	0	20	1	131	0	131
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3
	Left-Through	206	1	105	1	207	105	0	219	1	111	1	220	1	112	0	220	1	112	0	112
	Through	1	1	0	0	1	0	1	2	1	0	0	2	1	0	0	2	1	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Left	143	1	143	0	143	143	21	173	1	173	0	173	1	173	0	173	1	173	1	173
	Left-Through	22	0	22	0	22	22	13	36	0	36	0	36	0	36	0	36	0	36	0	36
	Through	118	1	118	0	118	118	8	133	1	133	0	133	1	133	0	133	1	133	1	133
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WESTBOUND	Left	39	1	39	0	39	39	18	59	1	59	0	59	1	59	0	59	1	59	1	59
	Left-Through	137	0	173	0	137	173	30	175	0	265	0	175	0	265	0	175	0	265	0	265
	Through	36	1	0	0	36	0	52	90	1	0	0	90	1	0	0	90	1	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES			North-South: 114 East-West: 316 SUM: 430	North-South: 114 East-West: 316 SUM: 430	North-South: 131 East-West: 438 SUM: 569	North-South: 134 East-West: 438 SUM: 572	North-South: 134 East-West: 438 SUM: 572	North-South: 134 East-West: 438 SUM: 572	North-South: 134 East-West: 438 SUM: 572	North-South: 134 East-West: 438 SUM: 572											
VOLUME/CAPACITY (V/C) RATIO:			0.287	0.287	0.379	0.381	0.381	0.381	0.381	0.381											
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.187	0.187	0.279	0.281	0.281	0.281	0.281	0.281											
LEVEL OF SERVICE (LOS):			A	A	A	A	A	A	A	A											

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
7		East-West Street: Carlos Ave			Projection Year: 2023			Peak Hour: AM				Reviewed by:				Project: J1522			
No. of Phases		3			3			3				3		3		3			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2				2		2		2			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB-- 0		NB-- 0	SB-- 0		NB-- 0	SB-- 0		NB-- 0	SB-- 0		NB-- 0	SB-- 0				
		EB-- 0	WB-- 0		EB-- 0	WB-- 0		EB-- 0	WB-- 0		EB-- 0	WB-- 0		EB-- 0	WB-- 0				
ATSAC-1 or ATSAC+ATCS-2?		2			2			2				2		2		2			
Override Capacity		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	33	1	33	0	33	33	0	35	1	35	0	35	1	35	0	35	1	35
	Left-Through		0							0				0				0	
	Through	322	1	169	6	328	172	34	376	1	197	6	382	1	200	0	382	1	200
	Through-Right		1							1				1				1	
	Right	16	0	16	0	16	16	0	17	0	17	0	17	0	17	0	17	0	17
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	13	0	13	0	13	13	0	14	0	14	0	14	0	14	0	14	0	14
	Left-Through		1							1				1				1	
	Through	836	0	455	3	839	456	46	933	0	506	3	936	0	507	0	936	0	507
	Through-Right		1							1				1				1	
	Right	47	0	455	0	47	456	0	50	0	506	0	50	0	507	0	50	0	507
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	17	0	17	0	17	17	0	18	0	18	0	18	0	18	0	18	0	18
	Left-Through		0							0				0				0	
	Through	6	0	60	0	6	60	0	6	0	63	0	6	0	63	0	6	0	63
	Through-Right		0							0				0				0	
	Right	37	0	0	0	37	0	0	39	0	0	0	39	0	0	0	39	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
WESTBOUND	Left	31	0	31	0	31	31	2	35	0	35	0	35	0	35	0	35	0	35
	Left-Through		0							0				0				0	
	Through	4	0	67	0	4	67	0	4	0	73	0	4	0	73	0	4	0	73
	Through-Right		0							0				0				0	
	Right	32	0	0	0	32	0	0	34	0	0	0	34	0	0	0	34	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 488		488	North-South: 489		489	North-South: 541		541	North-South: 542		542	North-South: 542		542	North-South: 136		136
		East-West: 127		127	East-West: 127		127	East-West: 136		136	East-West: 136		136	East-West: 136		136	East-West: 136		136
		SUM: 615		615	SUM: 616		616	SUM: 677		677	SUM: 678		678	SUM: 678		678	SUM: 678		678
VOLUME/CAPACITY (V/C) RATIO:				0.432			0.432			0.475			0.476			0.476			0.476
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.332			0.332			0.375			0.376			0.376			0.376
LEVEL OF SERVICE (LOS):				A			A			A			A			A			A

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

AM.xls

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Vine St			Year of Count:			2017		Ambient Growth: (%):			1		Conducted by:		GTC		Date:		12/1/2016	
9		East-West Street:			Hollywood Blvd			Projection Year:			2023		Peak Hour:			AM		Reviewed by:				Project:		J1522	
No. of Phases					3			3			3			3			3			3					
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0			0			0			0			0			0					
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0								
ATSAC-1 or ATSAC+ATCS-2?					EB-- 3 WB-- 0			EB-- 3 WB-- 0			EB-- 3 WB-- 0			EB-- 3 WB-- 0			EB-- 3 WB-- 0								
Override Capacity					2			2			2			2			2								
					0			0			0			0			0								
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION						
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume			
NORTHBOUND	Left	90	1	90	0	90	90	2	98	1	98	0	98	1	98	0	98	1	98						
	Left-Through		0							0				0				0							
	Through	530	2	265	0	530	265	71	634	2	317	0	634	2	317	0	634	2	317						
	Through-Right		0							0				0				0							
	Right	197	1	148	0	197	148	5	214	1	161	0	214	1	161	0	214	1	161						
	Left-Through-Right		0							0				0				0							
	Left-Right		0							0				0				0							
SOUTHBOUND	Left	36	1	36	0	36	36	22	60	1	60	0	60	1	60	0	60	1	60						
	Left-Through		0							0				0				0							
	Through	1076	1	603	6	1082	606	96	1238	1	695	6	1244	1	698	0	1244	1	698						
	Through-Right		1							1				1				1							
	Right	130	0	130	0	130	130	14	152	0	152	0	152	0	152	0	152	0	152						
	Left-Through-Right		0							0				0				0							
	Left-Right		0							0				0				0							
EASTBOUND	Left	23	1	23	0	23	23	16	40	1	40	0	40	1	40	0	40	1	40						
	Left-Through		0							0				0				0							
	Through	475	2	238	3	478	239	276	780	2	390	3	783	2	392	0	783	2	392						
	Through-Right		0							0				0				0							
	Right	60	1	0	0	60	0	10	74	1	0	0	74	1	0	0	74	1	0						
	Left-Through-Right		0							0				0				0							
	Left-Right		0							0				0				0							
WESTBOUND	Left	99	1	99	0	99	99	1	106	1	106	0	106	1	106	0	106	1	106						
	Left-Through		0							0				0				0							
	Through	924	1	476	8	932	480	177	1158	1	598	8	1166	1	602	0	1166	1	602						
	Through-Right		1							1				1				1							
	Right	27	0	27	0	27	27	8	37	0	37	0	37	0	37	0	37	0	37						
	Left-Through-Right		0							0				0				0							
	Left-Right		0							0				0				0							
CRITICAL VOLUMES					North-South: 693			North-South: 696			North-South: 793			North-South: 796			North-South: 796								
					East-West: 499			East-West: 503			East-West: 638			East-West: 642			East-West: 642								
					SUM: 1192			SUM: 1199			SUM: 1431			SUM: 1438			SUM: 1438								
VOLUME/CAPACITY (V/C) RATIO:					0.836			0.841			1.004			1.009			1.009								
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.736			0.741			0.904			0.909			0.909								
LEVEL OF SERVICE (LOS):					C			C			E			E			E								

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.005	Δv/c after mitigation:	0.005
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
10	East-West Street:	Hollywood Blvd	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	32	1	32	8	40	40	0	34	1	34	8	42	1	42	0	42	1	42	
	Left-Through	81	1	81	24	105	105	17	103	1	103	24	127	1	127	0	127	1	127	
	Through	41	1	0	0	41	0	4	48	1	0	0	48	1	0	0	48	1	0	
	Through-Right		0																	
	Left-Through-Right		0																	
SOUTHBOUND	Left	55	1	55	0	55	55	12	70	1	70	0	70	1	70	0	70	1	70	
	Left-Through	225	1	225	1	226	226	0	239	1	239	1	240	1	240	0	240	1	240	
	Through	46	1	9	0	46	9	15	64	1	13	0	64	1	13	0	64	1	13	
	Through-Right		0																	
	Left-Through-Right		0																	
EASTBOUND	Left	75	1	75	0	75	75	22	102	1	102	0	102	1	102	0	102	1	102	
	Left-Through	513	2	257	0	513	257	236	781	2	391	0	781	2	391	0	781	2	391	
	Through	125	1	109	3	128	108	0	133	1	116	3	136	1	115	0	136	1	115	
	Through-Right		0																	
	Left-Through-Right		0																	
WESTBOUND	Left	182	1	182	0	182	182	11	204	1	204	0	204	1	204	0	204	1	204	
	Left-Through	1057	1	555	0	1057	555	231	1353	1	720	0	1353	1	720	0	1353	1	720	
	Through	53	0	53	0	53	53	30	86	0	86	0	86	0	86	0	86	0	86	
	Through-Right		0																	
	Left-Through-Right		0																	
CRITICAL VOLUMES			North-South: 257 East-West: 630 SUM: 887			North-South: 266 East-West: 630 SUM: 896			North-South: 273 East-West: 822 SUM: 1095				North-South: 282 East-West: 822 SUM: 1104				North-South: 282 East-West: 822 SUM: 1104			
VOLUME/CAPACITY (V/C) RATIO:			0.591			0.597			0.730				0.736				0.736			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.491			0.497			0.630				0.636				0.636			
LEVEL OF SERVICE (LOS):			A			A			B				B				B			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.006	Δv/c after mitigation:	0.006
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Gower St		Year of Count:	2017		Ambient Growth: (%):	1		Conducted by:	GTC		Date:	12/1/2016	
11	East-West Street:	Hollywood Blvd		Projection Year:	2023		Peak Hour:	AM		Reviewed by:			Project:	J1522	
No. of Phases		2		2		2		2		2		2		2	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0		0		0		0		0		0		0	
Right Turns: FREE-1, NRTOR-2 or OLA-3?		0		0		0		0		0		0		0	
ATSAC-1 or ATSAC+ATCS-2?		0		0		0		0		0		0		0	
Override Capacity		2		2		2		2		2		2		2	
NB--		0		0		0		0		0		0		0	
SB--		0		0		0		0		0		0		0	
EB--		0		0		0		0		0		0		0	
WB--		0		0		0		0		0		0		0	
ATCS-1 or ATCS+ATCS-2?		2		2		2		2		2		2		2	
Override Capacity		0		0		0		0		0		0		0	
MOVEMENT		EXISTING CONDITION		EXISTING PLUS PROJECT		FUTURE CONDITION W/O PROJECT		FUTURE CONDITION W/ PROJECT		FUTURE W/ PROJECT W/ MITIGATION					
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	44	1	44	0	44	44	16	63	1	63	0	63	1	63
	Left-Through		0							0				0	
	Through	295	1	191	6	301	194	32	345	1	237	6	351	1	240
	Through-Right		1							1				1	
	Right	87	0	87	0	87	87	36	128	0	128	0	128	0	128
SOUTHBOUND	Left-Through-Right		0							0				0	
	Left-Right		0							0				0	
	Left	66	1	66	0	66	66	4	74	1	74	0	74	1	74
	Left-Through		0							0				0	
	Through	585	1	585	3	588	588	40	661	1	661	3	664	1	664
EASTBOUND	Through-Right		0							0				0	
	Right	360	1	332	0	360	332	4	386	1	356	0	386	1	356
	Left-Through-Right		0							0				0	
	Left-Right		0							0				0	
	Left	56	1	56	0	56	56	1	60	1	60	0	60	1	60
WESTBOUND	Left-Through		0							0				0	
	Through	463	1	254	8	471	258	213	704	1	394	8	712	1	398
	Through-Right		1							1				1	
	Right	45	0	45	0	45	45	35	83	0	83	0	83	0	83
	Left-Through-Right		0							0				0	
CRITICAL VOLUMES	Left-Right		0							0				0	
	Left	13	1	13	0	13	13	37	51	1	51	0	51	1	51
	Left-Through		0							0				0	
	Through	852	1	488	3	855	490	225	1129	1	631	3	1132	1	633
	Through-Right		1							1				1	
VOLUME/CAPACITY (V/C) RATIO:	Right	124	0	124	0	124	124	1	133	0	133	0	133	0	133
	Left-Through-Right		0							0				0	
	Left-Right		0							0				0	
	North-South:	629		632		724		727		727		727		727	
	East-West:	544		546		691		693		693		693		693	
SUM:	SUM:	1173		1178		1415		1420		1420		1420		1420	
	VOLUME/CAPACITY (V/C) RATIO:	0.782		0.785		0.943		0.947		0.947		0.947		0.947	
	V/C LESS ATSAC/ATCS ADJUSTMENT:	0.682		0.685		0.843		0.847		0.847		0.847		0.847	
	LEVEL OF SERVICE (LOS):	B		B		D		D		D		D		D	
	REMARKS:														

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Ivar Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016									
12	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522									
No. of Phases		2	2		2		2		2										
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0	0		0		0		0										
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0	NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0										
ATSAC-1 or ATSAC+ATCS-2?		EB-- 0 WB-- 0	EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0										
Override Capacity		2	2		2		2		2										
		0	0		0		0		0										
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	22	0	22	0	22	22	0	23	0	23	0	23	0	23	0	23	0	23
	Left-Through		0							0				0				0	
	Through	96	0	127	0	96	127	0	102	0	135	0	102	0	135	0	102	0	135
	Through-Right		0							0				0				0	
	Right	9	0	0	0	9	0	0	10	0	0	0	10	0	0	0	10	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3
	Left-Through		0							0				0				0	
	Through	389	0	416	0	389	416	0	413	0	441	0	413	0	441	0	413	0	441
	Through-Right		0							0				0				0	
	Right	24	0	0	0	24	0	0	25	0	0	0	25	0	0	0	25	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
EASTBOUND	Left	14	0	14	0	14	14	0	15	0	15	0	15	0	15	0	15	0	15
	Left-Through		0							0				0				0	
	Through	17	0	75	9	26	84	12	30	0	92	9	39	0	101	0	39	0	101
	Through-Right		0							0				0				0	
	Right	44	0	0	0	44	0	0	47	0	0	0	47	0	0	0	47	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
WESTBOUND	Left	11	0	11	0	11	11	0	12	0	12	0	12	0	12	0	12	0	12
	Left-Through		0							0				0				0	
	Through	15	0	41	25	40	66	4	20	0	48	25	45	0	73	0	45	0	73
	Through-Right		0							0				0				0	
	Right	15	0	0	0	15	0	0	16	0	0	0	16	0	0	0	16	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
CRITICAL VOLUMES		North-South: 438 East-West: 86 SUM: 524	North-South: 438 East-West: 95 SUM: 533		North-South: 464 East-West: 104 SUM: 568		North-South: 464 East-West: 113 SUM: 577		North-South: 464 East-West: 113 SUM: 577										
VOLUME/CAPACITY (V/C) RATIO:		0.349	0.355		0.379		0.385		0.385										
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.249	0.255		0.279		0.285		0.285										
LEVEL OF SERVICE (LOS):		A	A		A		A		A										

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.006	Δv/c after mitigation:	0.006
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
13	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	52	1	52	0	52	52	0	55	1	55	0	55	1	55	0	55	1	55	
	Left-Through		0							0				0				0		
	Through	645	2	323	0	645	323	123	808	2	404	0	808	2	404	0	808	2	404	
	Through-Right		0							0				0				0		
	Right	96	1	56	1	97	55	1	103	1	59	1	104	1	58	0	104	1	58	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	33	1	33	6	39	39	0	35	1	35	6	41	1	41	0	41	1	41	
	Left-Through		0							0				0				0		
	Through	1275	1	669	0	1275	669	108	1461	1	765	0	1461	1	765	0	1461	1	765	
	Through-Right		1							1				1				1		
	Right	62	0	62	0	62	62	2	68	0	68	0	68	0	68	0	68	0	68	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	27	1	27	0	27	27	10	39	1	39	0	39	1	39	0	39	1	39	
	Left-Through		0							0				0				0		
	Through	58	0	126	9	67	135	0	62	0	134	9	71	0	143	0	71	0	143	
	Through-Right		1							1				1				1		
	Right	68	0	0	0	68	0	0	72	0	0	0	72	0	0	0	72	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	81	1	81	3	84	84	3	89	1	89	3	92	1	92	0	92	1	92	
	Left-Through		0							0				0				0		
	Through	98	0	243	25	123	268	1	105	0	259	25	130	0	284	0	130	0	284	
	Through-Right		1							1				1				1		
	Right	145	0	0	0	145	0	0	154	0	0	0	154	0	0	0	154	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 721 East-West: 270 SUM: 991	North-South: 721 East-West: 295 SUM: 1016	North-South: 820 East-West: 298 SUM: 1118	North-South: 820 East-West: 323 SUM: 1143	North-South: 820 East-West: 323 SUM: 1143	North-South: 820 East-West: 323 SUM: 1143	North-South: 820 East-West: 323 SUM: 1143											
VOLUME/CAPACITY (V/C) RATIO:			0.661	0.677	0.745	0.762	0.762	0.762	0.762											
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.561	0.577	0.645	0.662	0.662	0.662	0.662											
LEVEL OF SERVICE (LOS):			A	A	B	B	B	B	B											

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.017	Δv/c after mitigation:	0.017
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
14	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	24	1	24	0	24	24	0	25	1	25	0	25	1	25	0	25	1	25	25
	Left-Through	79	0	105	0	79	124	19	103	0	131	0	103	0	150	0	103	0	150	
	Through	26	1	0	19	45	0	0	28	0	0	19	47	0	0	0	47	0	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SOUTHBOUND	Left	9	1	9	7	16	16	0	10	1	10	7	17	1	17	0	17	1	17	
	Left-Through	435	0	571	-3	432	568	6	468	0	616	-3	465	0	613	0	465	0	613	
	Through	136	1	0	0	136	0	4	148	0	0	0	148	0	0	0	148	0	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EASTBOUND	Left	62	1	62	0	62	62	2	68	1	68	0	68	1	68	0	68	1	68	
	Left-Through	40	0	101	29	69	118	0	42	0	107	29	71	0	124	0	71	0	124	
	Through	61	1	0	-12	49	0	0	65	0	0	-12	53	0	0	0	53	0	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WESTBOUND	Left	20	0	20	27	47	47	0	21	0	21	27	48	0	48	0	48	0	48	
	Left-Through	40	0	100	29	69	188	0	42	0	105	29	71	0	193	0	71	0	193	
	Through	40	0	0	32	72	0	0	42	0	0	32	74	0	0	0	74	0	0	
	Right	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CRITICAL VOLUMES			North-South: 595	East-West: 162	SUM: 757	North-South: 592	East-West: 250	SUM: 842	North-South: 641	East-West: 173	SUM: 814	North-South: 638	East-West: 261	SUM: 899	North-South: 638	East-West: 261	SUM: 899			
VOLUME/CAPACITY (V/C) RATIO:			0.505			0.561			0.543			0.599			0.599					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.405			0.461			0.443			0.499			0.499					
LEVEL OF SERVICE (LOS):			A			A			A			A			A					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.056	Δv/c after mitigation:	0.056
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016						
15		East-West Street: Selma Ave			Projection Year: 2023			Peak Hour: AM				Reviewed by:				Project: J1522						
No. of Phases					4			4				4				4						
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					2			2				2				2						
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0				NB-- 0 SB-- 0				NB-- 0 SB-- 0						
ATSAC-1 or ATSAC+ATCS-2?					EB-- 0 WB-- 0			EB-- 0 WB-- 0				EB-- 0 WB-- 0				EB-- 0 WB-- 0						
Override Capacity					2			2				2				2						
0					0			0				0				0						
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	23	1	23	0	23	23	0	24	1	24	0	24	1	24	0	24	1	24			
	Left-Through		0							0				0				0				
	Through	308	1	157	0	308	157	81	408	1	207	0	408	1	207	0	408	1	207			
	Through-Right		1							1				1				1				
	Left-Through-Right	5	0	5	0	5	5	0	5	0	5	0	5	0	5	0	5	0	5			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
SOUTHBOUND	Left	5	1	5	0	5	5	0	5	1	5	0	5	1	5	0	5	1	5			
	Left-Through		0							0				0				0				
	Through	663	0	828	0	663	831	114	818	0	993	0	818	0	996	0	818	0	996			
	Through-Right		1							1				1				1				
	Right	165	0	0	3	168	0	0	175	0	0	3	178	0	0	0	178	0	0			
	Left-Through-Right		0							0				0				0				
Left-Right		0							0				0				0					
EASTBOUND	Left	24	0	24	6	30	30	0	25	0	25	6	31	0	31	0	31	0	31			
	Left-Through		0							0				0				0				
	Through	1	0	42	0	1	52	0	1	0	44	0	1	0	54	0	1	0	54			
	Through-Right		0							0				0				0				
	Right	17	0	0	4	21	0	0	18	0	0	4	22	0	0	0	22	0	0			
	Left-Through-Right		1							1				1				1				
Left-Right		0							0				0				0					
WESTBOUND	Left	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3			
	Left-Through		0							0				0				0				
	Through	1	0	18	0	1	18	0	1	0	19	0	1	0	19	0	1	0	19			
	Through-Right		0							0				0				0				
	Right	14	0	0	0	14	0	0	15	0	0	0	15	0	0	0	15	0	0			
	Left-Through-Right		1							1				1				1				
Left-Right		0							0				0				0					
CRITICAL VOLUMES					North-South: 851 East-West: 60 SUM: 911			North-South: 854 East-West: 70 SUM: 924			North-South: 1017 East-West: 63 SUM: 1080				North-South: 1020 East-West: 73 SUM: 1093				North-South: 1020 East-West: 73 SUM: 1093			
VOLUME/CAPACITY (V/C) RATIO:					0.663			0.672			0.785				0.795				0.795			
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.563			0.572			0.685				0.695				0.695			
LEVEL OF SERVICE (LOS):					A			A			B				B				B			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.010	Δv/c after mitigation:	0.010
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Vine St			Year of Count:			2017			Ambient Growth: (%)			1			Conducted by:		GTC			Date:		12/1/2016		
16		East-West Street:			Sunset Blvd			Projection Year:			2023			Peak Hour:			AM			Reviewed by:					Project:		J1522		
No. of Phases								4						4						4						4			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?								0						0						0						0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			
ATSAC-1 or ATSAC+ATCS-2?					EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			
Override Capacity								2						2						2						2			
								0						0						0						0			
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION										
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume							
NORTHBOUND	Left	92	1	92	0	92	92	2	100	1	100	0	100	1	100	0	100	1	100										
	Left-Through		0							0				0				0											
	Through	644	2	322	1	645	323	63	747	2	374	1	748	2	374	0	748	2	374										
	Through-Right		0							0				0				0											
	Right	210	1	1	0	210	1	42	265	1	0	0	265	1	0	0	265	1	0										
	Left-Through-Right		0							0				0				0											
SOUTHBOUND	Left	61	1	61	0	61	61	40	105	1	105	0	105	1	105	0	105	1	105										
	Left-Through		0							0				0				0											
	Through	1143	1	629	3	1146	630	62	1275	1	702	3	1278	1	704	0	1278	1	704										
	Through-Right		1							1				1				1											
	Right	114	0	114	0	114	114	8	129	0	129	0	129	0	129	0	129	0	129										
	Left-Through-Right		0							0				0				0											
EASTBOUND	Left	33	1	33	0	33	33	11	46	1	46	0	46	1	46	0	46	1	46										
	Left-Through		0							0				0				0											
	Through	772	2	285	5	777	286	224	1043	2	378	5	1048	2	380	0	1048	2	380										
	Through-Right		1							1				1				1											
	Right	82	0	82	0	82	82	4	91	0	91	0	91	0	91	0	91	0	91										
	Left-Through-Right		0							0				0				0											
WESTBOUND	Left	209	1	209	0	209	209	52	274	1	274	0	274	1	274	0	274	1	274										
	Left-Through		0							0				0				0											
	Through	1286	2	453	14	1300	458	201	1566	2	564	14	1580	2	569	0	1580	2	569										
	Through-Right		1							1				1				1											
	Right	73	0	73	0	73	73	50	127	0	127	0	127	0	127	0	127	0	127										
	Left-Through-Right		0							0				0				0											
CRITICAL VOLUMES					North-South: 721			North-South: 722			North-South: 802			North-South: 804			North-South: 804												
					East-West: 494			East-West: 495			East-West: 652			East-West: 654			East-West: 654												
					SUM: 1215			SUM: 1217			SUM: 1454			SUM: 1458			SUM: 1458												
VOLUME/CAPACITY (V/C) RATIO:					0.884			0.885			1.057			1.060			1.060												
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.784			0.785			0.957			0.960			0.960												
LEVEL OF SERVICE (LOS):					C			C			E			E			E												

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
17	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	93	1	93	21	114	114	0	99	1	99	21	120	1	120	0	120	1	120	1
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	183	1	122	14	197	133	6	200	1	125	14	214	1	137	0	214	1	137	1
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	123	1	123	5	128	128	19	150	1	150	5	155	1	155	0	155	1	155	1
	Left-Through	866	3	289	0	866	289	330	1249	3	416	0	1249	3	416	0	1249	3	416	3
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WESTBOUND	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	1344	2	483	0	1344	485	265	1692	2	602	0	1692	2	604	0	1692	2	604	2
CRITICAL VOLUMES	Through-Right	106	1	106	6	112	112	0	113	0	113	6	119	0	119	0	119	0	119	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUME/CAPACITY (V/C) RATIO:			0.485			0.497			0.585			0.597			0.597			0.597		
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.385			0.397			0.485			0.497			0.497			0.497		
LEVEL OF SERVICE (LOS):			A			A			A			A			A			A		

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.012	Δv/c after mitigation:	0.012
Significant impacted?	NO	Fully mitigated?	N/A

AM.xls

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
19		East-West Street: Sunset Blvd			Projection Year: 2023			Peak Hour: AM				Reviewed by:				Project: J1522			
No. of Phases		3			3			3				3		3		3			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0				0		0		0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB-- 0		NB-- 0	SB-- 0		NB-- 0	SB-- 0		NB-- 0	SB-- 0		NB-- 0	SB-- 0				
		EB-- 0	WB-- 0		EB-- 0	WB-- 0		EB-- 0	WB-- 0		EB-- 0	WB-- 0		EB-- 0	WB-- 0				
ATSAC-1 or ATSAC+ATCS-2?		2			2			2				2		2		2			
Override Capacity		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	43	1	43	2	45	45	20	66	1	66	2	68	1	68	0	68	1	68
	Left-Through		0							0				0				0	
	Through	314	0	387	0	314	387	29	362	0	441	0	362	0	441	0	362	0	441
	Through-Right		1							1				1				1	
	Right	73	0	0	0	73	0	2	79	0	0	0	79	0	0	0	79	0	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	81	1	81	0	81	81	1	87	1	87	0	87	1	87	0	87	1	87
	Left-Through		0							0				0				0	
	Through	490	0	540	4	494	544	52	572	0	686	4	576	0	690	0	576	0	690
	Through-Right		1							1				1				1	
	Right	50	0	0	0	50	0	61	114	0	0	0	114	0	0	0	114	0	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	54	1	54	0	54	54	52	109	1	109	0	109	1	109	0	109	1	109
	Left-Through		0							0				0				0	
	Through	804	2	289	33	837	300	325	1178	2	420	33	1211	2	431	0	1211	2	431
	Through-Right		1							1				1				1	
	Right	62	0	62	0	62	62	15	81	0	81	0	81	0	81	0	81	0	81
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
WESTBOUND	Left	139	1	139	0	139	139	6	154	1	154	0	154	1	154	0	154	1	154
	Left-Through		0							0				0				0	
	Through	1644	2	563	7	1651	565	356	2101	2	716	7	2108	2	719	0	2108	2	719
	Through-Right		1							1				1				1	
	Right	45	0	45	0	45	45	0	48	0	48	0	48	0	48	0	48	0	48
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 583 East-West: 617 SUM: 1200			North-South: 589 East-West: 619 SUM: 1208			North-South: 752 East-West: 825 SUM: 1577				North-South: 758 East-West: 828 SUM: 1586				North-South: 758 East-West: 828 SUM: 1586			
VOLUME/CAPACITY (V/C) RATIO:		0.842			0.848			1.107				1.113				1.113			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.742			0.748			1.007				1.013				1.013			
LEVEL OF SERVICE (LOS):		C			C			F				F				F			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.006	Δv/c after mitigation:	0.006
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Bronson Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
20	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	63	1	63	0	63	63	0	67	1	67	0	67	1	67	0	67	1	67	
	Left-Through		0							0			0		0		0			
	Through	142	0	277	0	142	277	22	173	0	316	0	173	0	316	0	173	0	316	
	Through-Right		1							1			1		1		1			
	Right	135	0	0	0	135	0	0	143	0	0	0	143	0	0	0	143	0	0	
	Left-Through-Right		0							0			0		0		0			
	Left-Right		0							0			0		0		0			
SOUTHBOUND	Left	66	1	66	0	66	66	13	83	1	83	0	83	1	83	0	83	1	83	
	Left-Through		0							0			0		0		0			
	Through	313	0	493	0	313	493	24	356	0	566	0	356	0	566	0	356	0	566	
	Through-Right		1							1			1		1		1			
	Right	180	0	0	0	180	0	19	210	0	0	0	210	0	0	0	210	0	0	
	Left-Through-Right		0							0			0		0		0			
	Left-Right		0							0			0		0		0			
EASTBOUND	Left	46	1	46	0	46	46	41	90	1	90	0	90	1	90	0	90	1	90	
	Left-Through		0							0			0		0		0			
	Through	875	2	297	33	908	308	311	1240	2	419	33	1273	2	430	0	1273	2	430	
	Through-Right		1							1			1		1		1			
	Right	15	0	15	0	15	15	0	16	0	16	0	16	0	16	0	16	0	16	
	Left-Through-Right		0							0			0		0		0			
	Left-Right		0							0			0		0		0			
WESTBOUND	Left	83	1	83	0	83	83	0	88	1	88	0	88	1	88	0	88	1	88	
	Left-Through		0							0			0		0		0			
	Through	1582	2	550	7	1589	553	350	2029	2	717	7	2036	2	719	0	2036	2	719	
	Through-Right		1							1			1		1		1			
	Right	69	0	69	0	69	69	48	121	0	121	0	121	0	121	0	121	0	121	
	Left-Through-Right		0							0			0		0		0			
	Left-Right		0							0			0		0		0			
CRITICAL VOLUMES			North-South: 556		North-South: 556		North-South: 633		North-South: 633		North-South: 633		North-South: 633		North-South: 633		North-South: 633			
			East-West: 596		East-West: 599		East-West: 807		East-West: 807		East-West: 809		East-West: 809		East-West: 809		East-West: 809			
			SUM: 1152		SUM: 1155		SUM: 1440		SUM: 1442		SUM: 1442		SUM: 1442		SUM: 1442		SUM: 1442			
VOLUME/CAPACITY (V/C) RATIO:			0.768		0.770		0.960		0.961		0.961		0.961		0.961		0.961			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.668		0.670		0.860		0.861		0.861		0.861		0.861		0.861			
LEVEL OF SERVICE (LOS):			B		B		D		D		D		D		D		D			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

AM.xls

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Wilton Pl			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
22		East-West Street:			Sunset Blvd			Projection Year: 2023			Peak Hour: AM			Reviewed by:				Project: J1522				
No. of Phases					2			2			2			2		2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0						
ATSAC-1 or ATSAC+ATCS-2?					0			0			0			0		0		0				
Override Capacity					2			2			2			2		2		2				
					0			0			0			0		0		0				
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	↔	64	1	64	0	64	64	7	75	1	75	0	75	1	75	0	75	1	75		
	Left-Through	↔		0							0				0				0			
	Through	→	240	1	195	0	240	195	1	256	1	208	0	256	1	208	0	256	1	208		
	Through-Right	→		1							1				1				1			
	Right	→	149	0	149	0	149	149	1	159	0	159	0	159	0	159	0	159	0	159		
	Left-Through-Right	↔		0							0				0				0			
SOUTHBOUND	Left	↔	143	1	143	0	143	143	12	164	1	164	0	164	1	164	0	164	1	164		
	Left-Through	↔		0							0				0				0			
	Through	→	538	1	318	0	538	318	2	573	1	341	0	573	1	341	0	573	1	341		
	Through-Right	→		1							1				1				1			
	Right	→	98	0	98	0	98	98	4	108	0	108	0	108	0	108	0	108	0	108		
	Left-Through-Right	↔		0							0				0				0			
EASTBOUND	Left	↔	70	1	70	0	70	70	1	75	1	75	0	75	1	75	0	75	1	75		
	Left-Through	↔		0							0				0				0			
	Through	→	1107	2	438	6	1113	440	151	1326	2	516	6	1332	2	518	0	1332	2	518		
	Through-Right	→		1							1				1				1			
	Right	→	208	0	208	0	208	208	1	222	0	222	0	222	0	222	0	222	0	222		
	Left-Through-Right	↔		0							0				0				0			
WESTBOUND	Left	↔	118	1	118	0	118	118	0	125	1	125	0	125	1	125	0	125	1	125		
	Left-Through	↔		0							0				0				0			
	Through	→	793	2	397	2	795	398	185	1027	2	514	2	1029	2	515	0	1029	2	515		
	Through-Right	→		0							0				0				0			
	Right	→	105	1	34	0	105	34	3	114	1	32	0	114	1	32	0	114	1	32		
	Left-Through-Right	↔		0							0				0				0			
CRITICAL VOLUMES					North-South: 382			North-South: 382			North-South: 416			North-South: 416			North-South: 416					
					East-West: 556			East-West: 558			East-West: 641			East-West: 643			East-West: 643					
					SUM: 938			SUM: 940			SUM: 1057			SUM: 1059			SUM: 1059					
VOLUME/CAPACITY (V/C) RATIO:					0.625			0.627			0.705			0.706			0.706					
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.525			0.527			0.605			0.606			0.606					
LEVEL OF SERVICE (LOS):					A			A			B			B			B					

REMARKS:

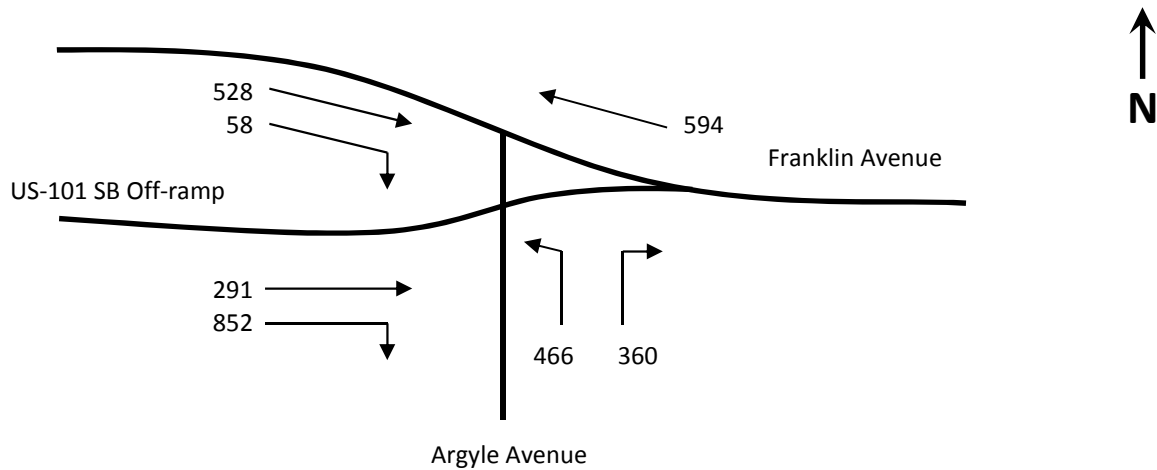
Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Existing Conditions - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{594}{2} = 297 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{528}{2} = 264 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 291$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{297}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{466 + 360}{2} = \frac{826}{2} = 413 \quad \text{or}$$

$$\text{Northbound Right: } 360 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 58$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{413}$$

$$\text{Critical Volume: } 297 + 413 = \mathbf{710}$$

$$\text{Intersection V/C: } \frac{710}{1500} = \mathbf{0.473}$$

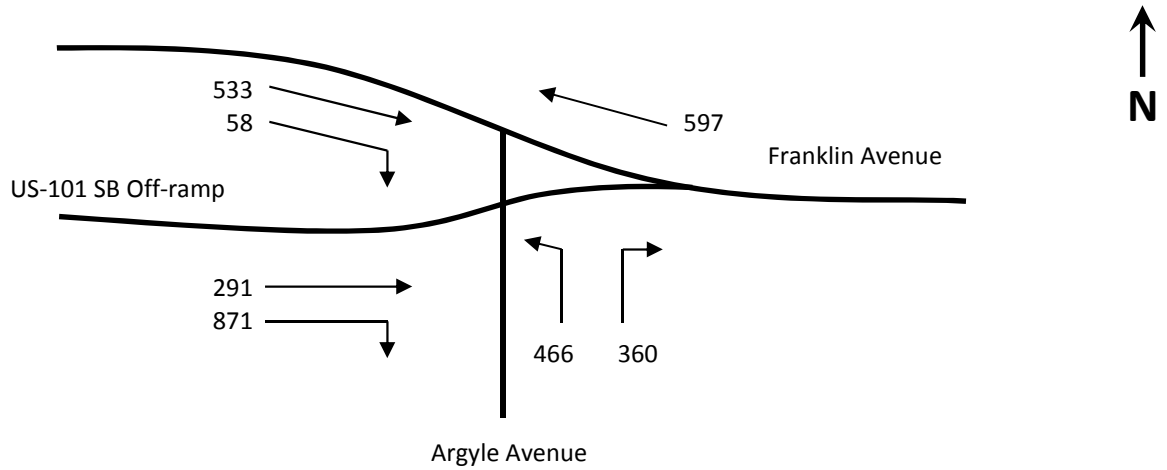
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.373}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Existing with Project Conditions - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{597}{2} = 299 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{533}{2} = 267 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 291$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{299}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{466 + 360}{2} = \frac{826}{2} = 413 \quad \text{or}$$

$$\text{Northbound Right: } 360 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 58$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{413}$$

$$\text{Critical Volume: } 299 + 413 = \mathbf{712}$$

$$\text{Intersection V/C: } \frac{712}{1500} = \mathbf{0.475}$$

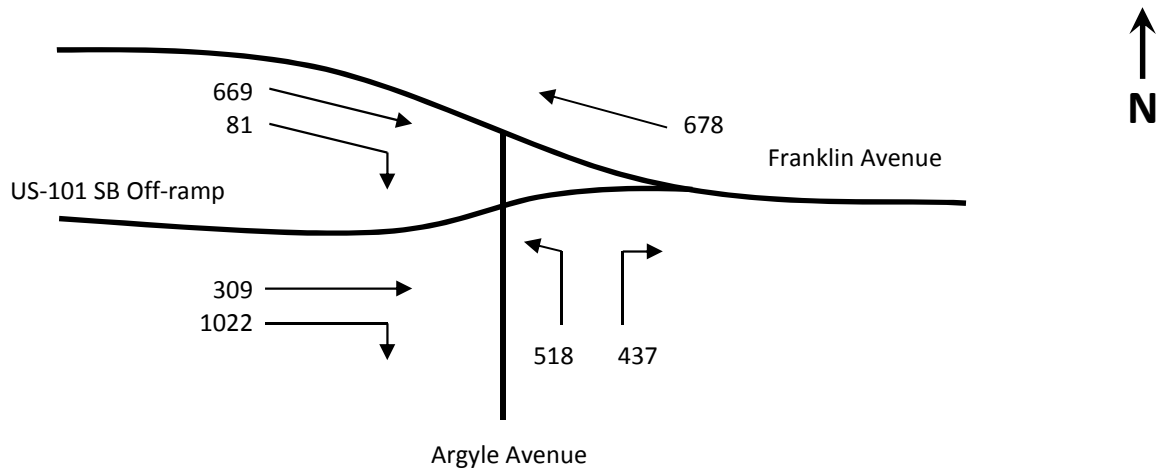
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.375}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Future without Project Conditions (Year 2023) - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{678}{2} = 339 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{669}{2} = 335 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 309$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{339}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{518 + 437}{2} = \frac{955}{2} = 478 \quad \text{or}$$

$$\text{Northbound Right: } 437 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 81$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{478}$$

$$\text{Critical Volume: } 339 + 478 = \mathbf{817}$$

$$\text{Intersection V/C: } \frac{817}{1500} = \mathbf{0.545}$$

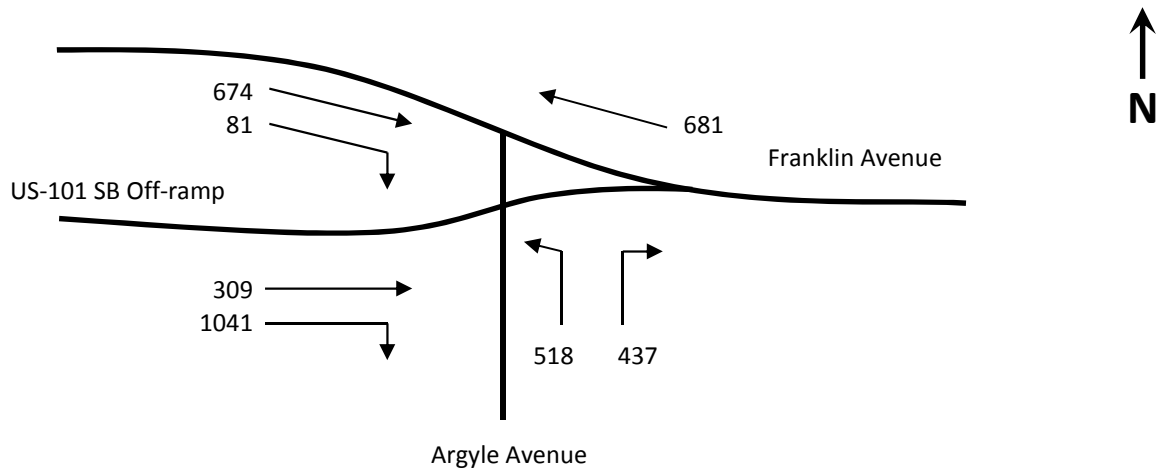
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.445}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Future with Project Conditions (Year 2023) - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{681}{2} = 341 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{674}{2} = 337 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 309$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{341}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{518 + 437}{2} = \frac{955}{2} = 478 \quad \text{or}$$

$$\text{Northbound Right: } 437 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 81$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{478}$$

$$\text{Critical Volume: } 341 + 478 = \mathbf{819}$$

$$\text{Intersection V/C: } \frac{819}{1500} = \mathbf{0.546}$$

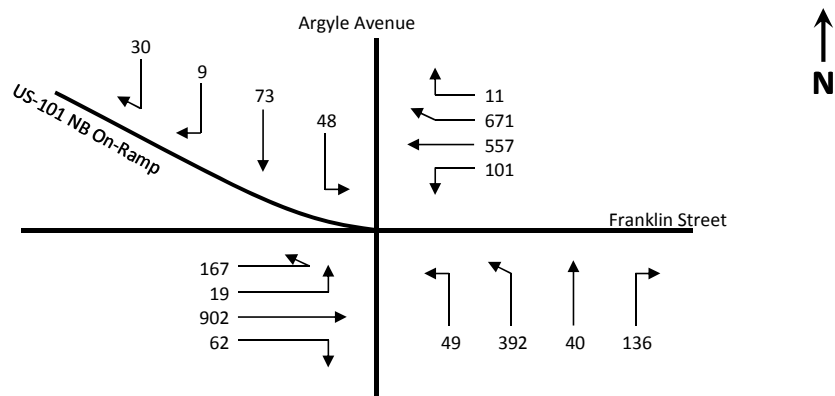
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.446}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Existing Conditions - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $167 + 19 = 186$ and

Westbound Throughs + Rights:

$$\frac{557 + 671 + 11}{2} = \frac{1239}{2} = 620 \quad \text{or}$$

Westbound Rights: $671 + 11 = 682$ or

Westbound Lefts: 101 and

Eastbound Throughs: $\frac{902}{2} = 451$ or

Eastbound Rights: 62

Critical Volume #1 (CV1): **868**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{49 + 392 + 40}{2} = \frac{481}{2} = 241 \quad \text{or}$$

Northbound Rights: $136 - 0.5 \times \text{WBL} = 85$

Critical Volume #2 (CV2): **241**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 48 or

Southbound Throughs + Rights:

$$\frac{73 + 9 + 30}{2} = \frac{112}{2} = 56 \quad \text{or}$$

Southbound Rights: $9 + 30 = 39$

Critical Volume #3 (CV3): **56**

Critical Volume: $868 + 241 + 56 = 1165$

Intersection V/C: $\frac{1165}{1375} = 0.847$

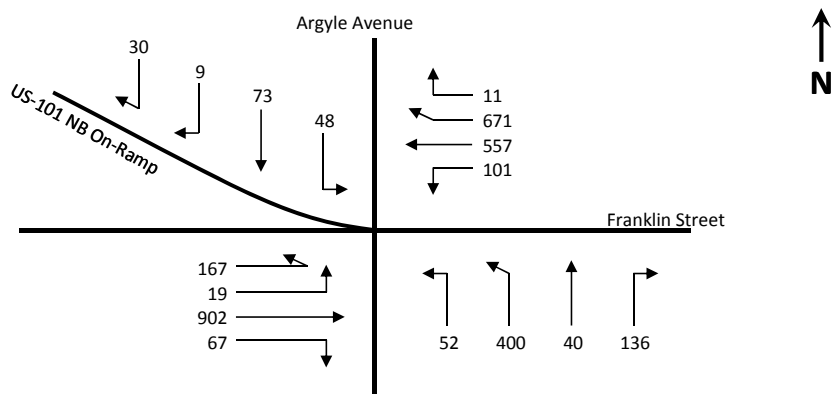
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.747**

Intersection LOS: **C**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Existing with Project Conditions - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $167 + 19 = 186$ and

Westbound Throughs + Rights:

$$\frac{557 + 671 + 11}{2} = \frac{1239}{2} = 620 \quad \text{or}$$

Westbound Rights: $671 + 11 = 682$ or

Westbound Lefts: 101 and

Eastbound Throughs: $\frac{902}{2} = 451$ or

Eastbound Rights: 67

Critical Volume #1 (CV1): **868**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{52 + 400 + 40}{2} = \frac{492}{2} = 246 \quad \text{or}$$

Northbound Rights: $136 - 0.5 \times \text{WBL} = 85$

Critical Volume #2 (CV2): **246**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 48 or

Southbound Throughs + Rights:

$$\frac{73 + 9 + 30}{2} = \frac{112}{2} = 56 \quad \text{or}$$

Southbound Rights: $9 + 30 = 39$

Critical Volume #3 (CV3): **56**

Critical Volume: $868 + 246 + 56 = 1170$

Intersection V/C: $\frac{1170}{1375} = 0.851$

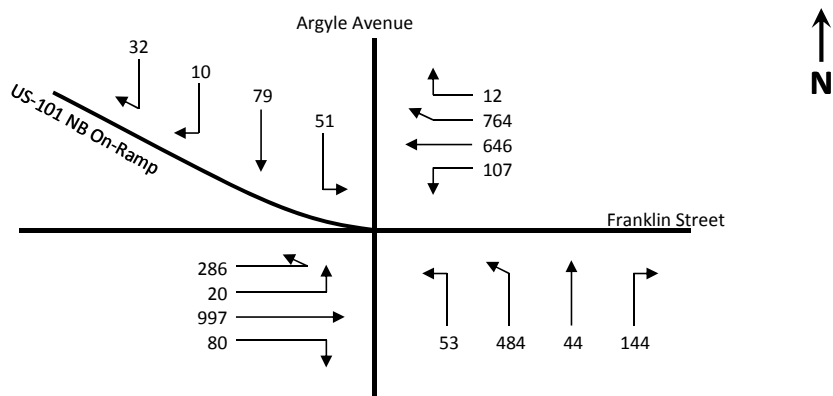
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.751**

Intersection LOS: **C**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Future without Project Conditions (Year 2023) - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $286 + 20 = 306$ and

Westbound Throughs + Rights:

$$\frac{646 + 764 + 12}{2} = \frac{1422}{2} = 711 \quad \text{or}$$

Westbound Rights: $764 + 12 = 776$ or

Westbound Lefts: 107 and

Eastbound Throughs: $\frac{997}{2} = 499$ or

Eastbound Rights: 80

Critical Volume #1 (CV1): **1082**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{53 + 484 + 44}{2} = \frac{581}{2} = 291 \quad \text{or}$$

Northbound Rights: $144 - 0.5 \times \text{WBL} = 90$

Critical Volume #2 (CV2): **291**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 51 or

Southbound Throughs + Rights:

$$\frac{79 + 10 + 32}{2} = \frac{121}{2} = 61 \quad \text{or}$$

Southbound Rights: $10 + 32 = 42$

Critical Volume #3 (CV3): **61**

Critical Volume: $1082 + 291 + 61 = 1434$

Intersection V/C: $\frac{1434}{1375} = 1.043$

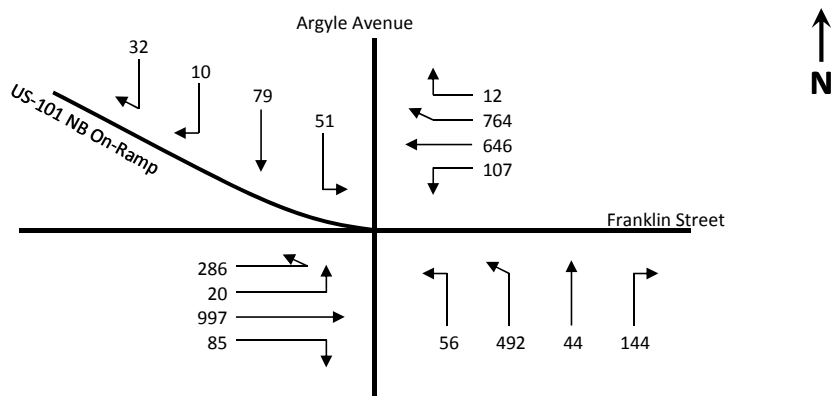
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.943**

Intersection LOS: **E**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Future with Project Conditions (Year 2023) - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $286 + 20 = 306$ and

Westbound Throughs + Rights:

$$\frac{646 + 764 + 12}{2} = \frac{1422}{2} = 711 \quad \text{or}$$

Westbound Rights: $764 + 12 = 776$ or

Westbound Lefts: 107 and

Eastbound Throughs: $\frac{997}{2} = 499$ or

Eastbound Rights: 85

Critical Volume #1 (CV1): **1082**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{56 + 492 + 44}{2} = \frac{592}{2} = 296 \quad \text{or}$$

Northbound Rights: $144 - 0.5 \times \text{WBL} = 90$

Critical Volume #2 (CV2): **296**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 51 or

Southbound Throughs + Rights:

$$\frac{79 + 10 + 32}{2} = \frac{121}{2} = 61 \quad \text{or}$$

Southbound Rights: $10 + 32 = 42$

Critical Volume #3 (CV3): **61**

Critical Volume: $1082 + 296 + 61 = 1439$

Intersection V/C: $\frac{1439}{1375} = 1.047$

ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.947**

Intersection LOS: **E**

PM.xls

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Ivar Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016											
4	East-West Street:	Yucca St	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522											
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0												
			2		2		2		2												
			0		0		0		0												
			0		0		0		0												
			0		0		0		0												
			2		2		2		2												
			0		0		0		0												
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT			FUTURE CONDITION W/ PROJECT			FUTURE W/ PROJECT W/ MITIGATION						
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	138	0	138	0	138	138	0	146	0	146	0	146	0	146	0	146	0	146	0	146
	Left-Through	14	0	262	0	14	262	0	15	0	278	0	15	0	278	0	15	0	278	0	278
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right	110	0	0	0	110	0	0	117	0	0	0	117	0	0	0	117	0	0	0	0
	Left-Through-Right	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0
SOUTHBOUND	Left	1	0	1	0	1	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
	Left-Through	1	0	5	0	1	5	0	1	0	5	0	1	0	5	0	1	0	5	0	5
	Through	3	0	0	0	3	0	0	3	0	0	0	3	0	0	0	3	0	0	0	0
	Through-Right	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Left	10	1	10	0	10	10	0	11	1	11	0	11	1	11	0	11	1	11	1	11
	Left-Through	123	1	123	0	123	123	52	183	1	183	0	183	1	183	0	183	1	183	1	183
	Through	36	1	36	0	36	36	0	38	1	38	0	38	1	38	0	38	1	38	1	38
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WESTBOUND	Left	43	1	43	0	43	43	0	46	1	46	0	46	1	46	0	46	1	46	1	46
	Left-Through	278	1	278	0	278	278	52	347	1	347	0	347	1	347	0	347	1	347	1	347
	Through	16	1	16	0	16	16	0	17	1	17	0	17	1	17	0	17	1	17	1	17
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES			North-South: 263	East-West: 288	SUM: 551	North-South: 263	East-West: 288	SUM: 551	North-South: 279	East-West: 358	SUM: 637	North-South: 279	East-West: 358	SUM: 637	North-South: 279	East-West: 358	SUM: 637	North-South: 279	East-West: 358	SUM: 637	
VOLUME/CAPACITY (V/C) RATIO:			0.367	0.367	0.367	0.367	0.367	0.367	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.267	0.267	0.267	0.267	0.267	0.267	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	
LEVEL OF SERVICE (LOS):			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.000	Δv/c after mitigation:	0.000
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
5	East-West Street:	Yucca St	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	210	1	210	0	210	210	28	251	1	251	0	251	1	251	0	251	1	251	
	Left-Through		0							0				0				0		
	Through	752	1	484	0	752	484	80	878	1	576	0	878	1	576	0	878	1	576	
	Through-Right		1							1				1				1		
	Right	215	0	215	0	215	215	46	274	0	274	0	274	0	274	0	274	0	274	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	39	1	39	0	39	39	0	41	1	41	0	41	1	41	0	41	1	41	
	Left-Through		0							0				0				0		
	Through	824	1	434	19	843	443	147	1022	1	534	19	1041	1	544	0	1041	1	544	
	Through-Right		1							1				1				1		
	Right	43	0	43	0	43	43	0	46	0	46	0	46	0	46	0	46	0	46	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	51	1	51	0	51	51	0	54	1	54	0	54	1	54	0	54	1	54	
	Left-Through		0							0				0				0		
	Through	138	1	138	0	138	138	11	157	1	157	0	157	1	157	0	157	1	157	
	Through-Right		0							0				0				0		
	Right	47	1	0	0	47	0	32	82	1	0	0	82	1	0	0	82	1	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	52	1	52	0	52	52	48	103	1	103	0	103	1	103	0	103	1	103	
	Left-Through		0							0				0				0		
	Through	78	1	45	0	78	45	16	99	1	56	0	99	1	56	0	99	1	56	
	Through-Right		1							1				1				1		
	Right	11	0	11	0	11	11	0	12	0	12	0	12	0	12	0	12	0	12	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 644 East-West: 190 SUM: 834	North-South: 653 East-West: 190 SUM: 843	North-South: 785 East-West: 260 SUM: 1045	North-South: 795 East-West: 260 SUM: 1055	North-South: 795 East-West: 260 SUM: 1055	North-South: 795 East-West: 260 SUM: 1055	North-South: 795 East-West: 260 SUM: 1055	North-South: 795 East-West: 260 SUM: 1055										
VOLUME/CAPACITY (V/C) RATIO:			0.556	0.562	0.697	0.703	0.703	0.703	0.703	0.703										
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.456	0.462	0.597	0.603	0.603	0.603	0.603	0.603										
LEVEL OF SERVICE (LOS):			A	A	A	B	B	B	B	B										

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.006	Δv/c after mitigation:	0.006
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Argyle Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
6		East-West Street: Yucca St			Projection Year: 2023			Peak Hour: PM			Reviewed by:				Project: J1522				
No. of Phases		2			2			2					2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0					0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB--	0	SB--	1	NB--	0	SB--	1	NB--	0	SB--	1	NB--	0	SB--	1		
		EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0		
ATSAC-1 or ATSAC+ATCS-2?		2			2			2					2		2				
Override Capacity		0			0			0					0		0				
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	23	0	23	0	23	23	15	39	0	39	0	39	0	39	0	39	0	39
	Left-Through		1							1			1					1	
	Through	432	0	237	10	442	242	54	513	0	298	10	523	0	303	0	523	0	303
	Through-Right		1							1			1					1	
	Right	18	0	237	0	18	242	24	43	0	298	0	43	0	303	0	43	0	303
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	9	0	9	0	9	9	0	10	0	10	0	10	0	10	0	10	0	10
	Left-Through		1							1			1					1	
	Through	111	0	65	5	116	67	1	119	0	70	5	124	0	72	0	124	0	72
	Through-Right		1							1			1					1	
	Right	1	1	0	0	1	0	2	3	1	0	0	3	1	0	0	3	1	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	246	1	246	0	246	246	34	295	1	295	0	295	1	295	0	295	1	295
	Left-Through		0							0				0				0	
	Through	86	1	86	0	86	86	10	101	1	101	0	101	1	101	0	101	1	101
	Through-Right		0							0				0				0	
	Right	63	1	63	0	63	63	13	80	1	80	0	80	1	80	0	80	1	80
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
WESTBOUND	Left	8	1	8	0	8	8	14	22	1	22	0	22	1	22	0	22	1	22
	Left-Through		0							0				0				0	
	Through	55	0	132	0	55	132	47	105	0	226	0	105	0	226	0	105	0	226
	Through-Right		1							1				1				1	
	Right	77	0	0	0	77	0	39	121	0	0	0	121	0	0	0	121	0	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 246 East-West: 378 SUM: 624			North-South: 251 East-West: 378 SUM: 629			North-South: 308 East-West: 521 SUM: 829			North-South: 313 East-West: 521 SUM: 834			North-South: 313 East-West: 521 SUM: 834					
VOLUME/CAPACITY (V/C) RATIO:		0.416			0.419			0.553			0.556			0.556					
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.316			0.319			0.453			0.456			0.456					
LEVEL OF SERVICE (LOS):		A			A			A			A			A					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
7		East-West Street: Carlos Ave			Projection Year: 2023			Peak Hour: PM				Reviewed by:				Project: J1522			
No. of Phases		3			3			3				3		3		3			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2				2		2		2			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0		
		EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0		
ATSAC-1 or ATSAC+ATCS-2?		2			2			2				2		2		2			
Override Capacity		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	19	1	19	0	19	19	0	20	1	20	0	20	1	20	0	20	1	20
	Left-Through		0							0				0				0	
	Through	750	1	382	3	753	383	66	862	1	439	3	865	1	441	0	865	1	441
	Through-Right		1							1				1				1	
	Right	13	0	13	0	13	13	2	16	0	16	0	16	0	16	0	16	0	16
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	16	0	16	0	16	16	0	17	0	17	0	17	0	17	0	17	0	17
	Left-Through		1							1				1				1	
	Through	536	0	312	11	547	317	43	612	0	352	11	623	0	358	0	623	0	358
	Through-Right		1							1				1				1	
	Right	23	0	312	0	23	317	0	24	0	352	0	24	0	358	0	24	0	358
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	12	0	12	0	12	12	0	13	0	13	0	13	0	13	0	13	0	13
	Left-Through		0							0				0				0	
	Through	0	0	43	0	0	43	0	0	0	46	0	0	0	46	0	0	0	46
	Through-Right		0							0				0				0	
	Right	31	0	0	0	31	0	0	33	0	0	0	33	0	0	0	33	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
WESTBOUND	Left	11	0	11	0	11	11	1	13	0	13	0	13	0	13	0	13	0	13
	Left-Through		0							0				0				0	
	Through	2	0	70	0	2	70	0	2	0	76	0	2	0	76	0	2	0	76
	Through-Right		0							0				0				0	
	Right	57	0	0	0	57	0	0	61	0	0	0	61	0	0	0	61	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 398 East-West: 113 SUM: 511			North-South: 399 East-West: 113 SUM: 512			North-South: 456 East-West: 122 SUM: 578				North-South: 458 East-West: 122 SUM: 580				North-South: 458 East-West: 122 SUM: 580			
VOLUME/CAPACITY (V/C) RATIO:		0.359			0.359			0.406				0.407				0.407			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.259			0.259			0.306				0.307				0.307			
LEVEL OF SERVICE (LOS):		A			A			A				A				A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

PM.xls

V/S #:	North-South Street:		Vine St			Year of Count: 2017			Ambient Growth: (%):			1	Conducted by:		GTC		Date:		12/1/2016	
	9	East-West Street:		Hollywood Blvd			Projection Year: 2023			Peak Hour:			PM	Reviewed by:				Project:		J1522
No. of Phases			3			3			3			3		3		3		3		
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0			0			0		0		0		0		
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0 EB-- 3 WB-- 0			NB-- 0 SB-- 0 EB-- 3 WB-- 0			NB-- 0 SB-- 0 EB-- 3 WB-- 0			NB-- 0 SB-- 0 EB-- 3 WB-- 0		NB-- 0 SB-- 0 EB-- 3 WB-- 0		NB-- 0 SB-- 0 EB-- 3 WB-- 0				
ATSAC-1 or ATSAC+ATCS-2?			2			2			2			2		2		2		2		
Override Capacity			0			0			0			0		0		0		0		
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	145	1	145	0	145	145	9	163	1	163	0	163	1	163	0	163	1	163	
	Left-Through		0							0				0				0		
	Through	988	2	494	0	988	494	108	1157	2	579	0	1157	2	579	0	1157	2	579	
	Through-Right		0							0				0				0		
	Right	260	1	221	0	260	221	1	277	1	231	0	277	1	231	0	277	1	231	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0			0			
SOUTHBOUND	Left	90	1	90	0	90	90	41	137	1	137	0	137	1	137	0	137	1	137	
	Left-Through		0							0				0				0		
	Through	876	1	468	19	895	477	134	1064	1	574	19	1083	1	584	0	1083	1	584	
	Through-Right		1							1				1				1		
	Right	59	0	59	0	59	59	21	84	0	84	0	84	0	84	0	84	0	84	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0			0			
EASTBOUND	Left	49	1	49	0	49	49	21	73	1	73	0	73	1	73	0	73	1	73	
	Left-Through		0							0				0				0		
	Through	836	2	418	8	844	422	241	1128	2	564	8	1136	2	568	0	1136	2	568	
	Through-Right		0							0				0				0		
	Right	88	1	0	0	88	0	3	96	1	0	0	96	1	0	0	96	1	0	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0			0			
WESTBOUND	Left	79	1	79	0	79	79	9	93	1	93	0	93	1	93	0	93	1	93	
	Left-Through		0							0				0				0		
	Through	683	1	379	3	686	380	407	1132	1	611	3	1135	1	613	0	1135	1	613	
	Through-Right		1							1				1				1		
	Right	74	0	74	0	74	74	11	90	0	90	0	90	0	90	0	90	0	90	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0			0			
CRITICAL VOLUMES			North-South: 613 East-West: 497 SUM: 1110			North-South: 622 East-West: 501 SUM: 1123			North-South: 737 East-West: 684 SUM: 1421				North-South: 747 East-West: 686 SUM: 1433				North-South: 747 East-West: 686 SUM: 1433			
VOLUME/CAPACITY (V/C) RATIO:			0.779			0.788			0.997				1.006				1.006			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.679			0.688			0.897				0.906				0.906			
LEVEL OF SERVICE (LOS):			B			B			D				E				E			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.009	Δ v/c after mitigation:	0.009
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave		Year of Count:	2017		Ambient Growth: (%)	1		Conducted by:	GTC		Date:	12/1/2016					
	East-West Street:	Hollywood Blvd		Projection Year:	2023		Peak Hour:	PM		Reviewed by:			Project:	J1522					
10	No. of Phases	2			2			2			2			2					
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0			0			0			0			0					
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB-- 0	NB-- 0	SB-- 0	NB-- 0	SB-- 0	NB-- 0	SB-- 0	NB-- 0	SB-- 0	NB-- 0	SB-- 0	NB-- 0	SB-- 0				
	ATSAC-1 or ATSAC+ATCS-2?	EB-- 0	WB-- 0	EB-- 0	WB-- 0	EB-- 0	WB-- 0	EB-- 0	WB-- 0	EB-- 0	WB-- 0	EB-- 0	WB-- 0	EB-- 0	WB-- 0				
	Override Capacity	2			2			2			2			2					
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	38	1	38	3	41	41	0	40	1	40	3	43	1	43	0	43	1	43
	Left-Through		0							0				0				0	
	Through	287	1	287	10	297	297	17	322	1	322	10	332	1	332	0	332	1	332
	Through-Right		0							0				0				0	
	Right	45	1	11	0	45	11	13	61	1	20	0	61	1	20	0	61	1	20
SOUTHBOUND	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
	Left	37	1	37	0	37	37	17	56	1	56	0	56	1	56	0	56	1	56
	Left-Through		0							0				0				0	
	Through	124	1	124	5	129	129	0	132	1	132	5	137	1	137	0	137	1	137
EASTBOUND	Through-Right		0							0				0				0	
	Right	65	1	10	0	65	10	11	80	1	3	0	80	1	3	0	80	1	3
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
	Left	111	1	111	0	111	111	37	155	1	155	0	155	1	155	0	155	1	155
WESTBOUND	Left-Through		0							0				0				0	
	Through	931	2	466	0	931	466	323	1311	2	656	0	1311	2	656	0	1311	2	656
	Through-Right		0							0				0				0	
	Right	169	1	150	8	177	157	0	179	1	159	8	187	1	166	0	187	1	166
	Left-Through-Right		0							0				0				0	
CRITICAL VOLUMES	Left-Right		0							0				0				0	
	Left	68	1	68	0	68	68	11	83	1	83	0	83	1	83	0	83	1	83
	Left-Through		0							0				0				0	
	Through	725	1	436	0	725	436	356	1126	1	660	0	1126	1	660	0	1126	1	660
	Through-Right		1							1				1				1	
VOLUME/CAPACITY (V/C) RATIO:	Right	147	0	147	0	147	147	38	194	0	194	0	194	0	194	0	194	0	194
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
	North-South:	324		334		378		388		388		388		388		388		388	
	East-West:	547		547		815		815		815		815		815		815		815	
V/C LESS ATSAC/ATCS ADJUSTMENT:	SUM:	871		881		1193		1203		1203		1203		1203		1203		1203	
		0.581		0.587		0.795		0.802		0.802		0.802		0.802		0.802		0.802	
		0.481		0.487		0.695		0.702		0.702		0.702		0.702		0.702		0.702	
LEVEL OF SERVICE (LOS):		A		A		B		C		C		C		C		C		C	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.007	Δv/c after mitigation:	0.007
Significant impacted?	NO	Fully mitigated?	N/A

VS #:	North-South Street:		Gower St			Year of Count: 2017			Ambient Growth: (%):			1		Conducted by:		GTC		Date:		12/1/2016		
	11	East-West Street:		Hollywood Blvd			Projection Year: 2023			Peak Hour:			PM		Reviewed by:				Project:		J1522	
No. of Phases						2						2				2					2	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?						0						0				0					0	
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			0			NB-- 0 SB-- 0			0		NB-- 0 SB-- 0		0		NB-- 0 SB-- 0			0	
ATSAC-1 or ATSAC+ATCS-2?			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0		EB-- 0 WB-- 0		0		EB-- 0 WB-- 0			0	
Override Capacity						2						2				2					2	
						0						0				0					0	
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	Left	84	1	84	0	84	84	48	137	1	137	0	137	1	137	0	137	1	137			
	Left-Through		0							0				0				0				
	Through	631	1	368	3	634	369	62	732	1	449	3	735	1	451	0	735	1	451			
	Through-Right		1							1				1				1				
	Right	104	0	104	0	104	104	56	166	0	166	0	166	0	166	0	166	0	166			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
SOUTHBOUND	Left	89	1	89	0	89	89	1	95	1	95	0	95	1	95	0	95	1	95			
	Left-Through		0							0				0				0				
	Through	496	1	496	11	507	507	33	560	1	560	11	571	1	571	0	571	1	571			
	Through-Right		0							0				0				0				
	Right	149	1	94	0	149	94	10	168	1	109	0	168	1	109	0	168	1	109			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
EASTBOUND	Left	110	1	110	0	110	110	2	119	1	119	0	119	1	119	0	119	1	119			
	Left-Through		0							0				0				0				
	Through	778	1	423	3	781	425	304	1130	1	613	3	1133	1	615	0	1133	1	615			
	Through-Right		1							1				1				1				
	Right	68	0	68	0	68	68	24	96	0	96	0	96	0	96	0	96	0	96			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
WESTBOUND	Left	72	1	72	0	72	72	29	105	1	105	0	105	1	105	0	105	1	105			
	Left-Through		0							0				0				0				
	Through	741	1	404	8	749	408	332	1119	1	596	8	1127	1	600	0	1127	1	600			
	Through-Right		1							1				1				1				
	Right	66	0	66	0	66	66	3	73	0	73	0	73	0	73	0	73	0	73			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
CRITICAL VOLUMES			North-South: 580			North-South: 591			North-South: 697				North-South: 708				North-South: 708					
			East-West: 514			East-West: 518			East-West: 718				East-West: 720				East-West: 720					
			SUM: 1094			SUM: 1109			SUM: 1415				SUM: 1428				SUM: 1428					
VOLUME/CAPACITY (V/C) RATIO:			0.729			0.739			0.943				0.952				0.952					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.629			0.639			0.843				0.852				0.852					
LEVEL OF SERVICE (LOS):			B			B			D				D				D					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.009	Δ v/c after mitigation:	0.009
Significant impacted?	NO	Fully mitigated?	N/A

I/S #:	North-South Street:		Ivar Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
	12	East-West Street:		Selma Ave			Projection Year: 2023			Peak Hour: PM			Reviewed by:		Project: J1522					
No. of Phases						2						2						2		
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?						0						0						0		
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			0			NB-- 0 SB-- 0			0			NB-- 0 SB-- 0			0		
ATSAC-1 or ATSAC+ATCS-2?			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0		
Override Capacity						2						2						2		
						0						0						0		
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	42	0	42	0	42	42	0	45	0	45	0	45	0	45	0	45	0	45	
	Left-Through		0							0			0				0			
	Through	277	0	345	0	277	345	0	294	0	367	0	294	0	367	0	294	0	367	
	Through-Right		0							0			0				0			
	Right	26	0	0	0	26	0	0	28	0	0	0	28	0	0	0	28	0	0	
	Left-Through-Right		1							1				1			1			
Left-Right		0								0				0			0			
SOUTHBOUND	Left	12	0	12	0	12	12	0	13	0	13	0	13	0	13	0	13	0	13	
	Left-Through		0							0			0				0			
	Through	158	0	203	0	158	203	0	168	0	216	0	168	0	216	0	168	0	216	
	Through-Right		0							0			0				0			
	Right	33	0	0	0	33	0	0	35	0	0	0	35	0	0	0	35	0	0	
	Left-Through-Right		1							1				1			1			
Left-Right		0								0				0			0			
EASTBOUND	Left	52	0	52	0	52	52	0	55	0	55	0	55	0	55	0	55	0	55	
	Left-Through		0							0			0				0			
	Through	75	0	198	26	101	224	5	85	0	215	26	111	0	241	0	111	0	241	
	Through-Right		0							0			0				0			
	Right	71	0	0	0	71	0	0	75	0	0	0	75	0	0	0	75	0	0	
	Left-Through-Right		1							1				1			1			
Left-Right		0								0				0			0			
WESTBOUND	Left	15	0	15	0	15	15	0	16	0	16	0	16	0	16	0	16	0	16	
	Left-Through		0							0			0				0			
	Through	26	0	80	10	36	90	13	41	0	98	10	51	0	108	0	51	0	108	
	Through-Right		0							0			0				0			
	Right	39	0	0	0	39	0	0	41	0	0	0	41	0	0	0	41	0	0	
	Left-Through-Right		1							1				1			1			
Left-Right		0								0				0			0			
CRITICAL VOLUMES			North-South: 357 East-West: 213 SUM: 570			North-South: 357 East-West: 239 SUM: 596			North-South: 380 East-West: 231 SUM: 611				North-South: 380 East-West: 257 SUM: 637				North-South: 380 East-West: 257 SUM: 637			
VOLUME/CAPACITY (V/C) RATIO:			0.380			0.397			0.407				0.425				0.425			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.280			0.297			0.307				0.325				0.325			
LEVEL OF SERVICE (LOS):			A			A			A				A				A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.018	Δ v/c after mitigation:	0.018
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
13	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	52	1	52	0	52	52	0	55	1	55	0	55	1	55	0	55	1	55	
	Left-Through		0							0				0				0		
	Through	1138	2	569	0	1138	569	123	1331	2	666	0	1331	2	666	0	1331	2	666	
	Through-Right		0							0				0				0		
	Right	108	1	84	4	112	88	3	118	1	91	4	122	1	95	0	122	1	95	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	67	1	67	19	86	86	0	71	1	71	19	90	1	90	0	90	1	90	
	Left-Through		0							0				0				0		
	Through	834	1	451	0	834	451	183	1068	1	575	0	1068	1	575	0	1068	1	575	
	Through-Right		1							1				1				1		
	Right	68	0	68	0	68	68	9	81	0	81	0	81	0	81	0	81	0	81	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	79	1	79	0	79	79	3	87	1	87	0	87	1	87	0	87	1	87	
	Left-Through		0							0				0				0		
	Through	199	0	282	26	225	308	2	213	0	301	26	239	0	327	0	239	0	327	
	Through-Right		1							1				1				1		
	Right	83	0	0	0	83	0	0	88	0	0	0	88	0	0	0	88	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	48	1	48	1	49	49	3	54	1	54	1	55	1	55	0	55	1	55	
	Left-Through		0							0				0				0		
	Through	97	0	167	10	107	177	1	104	0	178	10	114	0	188	0	114	0	188	
	Through-Right		1							1				1				1		
	Right	70	0	0	0	70	0	0	74	0	0	0	74	0	0	0	74	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 636		North-South: 655		North-South: 737		North-South: 756		North-South: 756		North-South: 756		North-South: 756		North-South: 756		North-South: 756	
			East-West: 330		East-West: 357		East-West: 355		East-West: 382		East-West: 382		East-West: 382		East-West: 382		East-West: 382		East-West: 382	
			SUM: 966		SUM: 1012		SUM: 1092		SUM: 1138		SUM: 1138		SUM: 1138		SUM: 1138		SUM: 1138		SUM: 1138	
VOLUME/CAPACITY (V/C) RATIO:			0.644		0.675		0.728		0.759		0.759		0.759		0.759		0.759		0.759	
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.544		0.575		0.628		0.659		0.659		0.659		0.659		0.659		0.659	
LEVEL OF SERVICE (LOS):			A		A		B		B		B		B		B		B		B	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.031	Δv/c after mitigation:	0.031
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Argyle Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
14		East-West Street: Selma Ave			Projection Year: 2023			Peak Hour: PM			Reviewed by:				Project: J1522				
No. of Phases		2			2			2			2		2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?		0			0			0			0		0		0				
Override Capacity		2			2			2			2		2		2				
		0			0			0			0		0		0				
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	44	1	44	0	44	44	0	47	1	47	0	47	1	47	0	47	1	47
	Left-Through		0							0				0				0	
	Through	210	0	240	0	210	280	25	248	0	280	0	248	0	320	0	248	0	320
	Through-Right		1							1				1				1	
	Right	30	0	0	40	70	0	0	32	0	0	40	72	0	0	0	72	0	0
	Left-Through-Right		0							0				0				0	
SOUTHBOUND	Left	8	1	8	15	23	23	0	8	1	8	15	23	1	23	0	23	1	23
	Left-Through		0							0				0				0	
	Through	262	0	362	-2	260	360	7	285	0	395	-2	283	0	393	0	283	0	393
	Through-Right		1							1				1				1	
	Right	100	0	0	0	100	0	4	110	0	0	0	110	0	0	0	110	0	0
	Left-Through-Right		0							0				0				0	
EASTBOUND	Left	95	1	95	0	95	95	5	106	1	106	0	106	1	106	0	106	1	106
	Left-Through		0							0				0				0	
	Through	110	0	189	56	166	237	0	117	0	201	56	173	0	249	0	173	0	249
	Through-Right		1							1				1				1	
	Right	79	0	0	-8	71	0	0	84	0	0	-8	76	0	0	0	76	0	0
	Left-Through-Right		0							0				0				0	
WESTBOUND	Left	11	0	11	11	22	22	0	12	0	12	11	23	0	23	0	23	0	23
	Left-Through		0							0				0				0	
	Through	62	0	165	11	73	200	0	66	0	176	11	77	0	211	0	77	0	211
	Through-Right		0							0				0				0	
	Right	92	0	0	13	105	0	0	98	0	0	13	111	0	0	0	111	0	0
	Left-Through-Right		1							1				1				1	
CRITICAL VOLUMES		North-South: 406 East-West: 260 SUM: 666			North-South: 404 East-West: 295 SUM: 699			North-South: 442 East-West: 282 SUM: 724				North-South: 440 East-West: 317 SUM: 757				North-South: 440 East-West: 317 SUM: 757			
VOLUME/CAPACITY (V/C) RATIO:		0.444			0.466			0.483				0.505				0.505			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.344			0.366			0.383				0.405				0.405			
LEVEL OF SERVICE (LOS):		A			A			A				A				A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.022	Δv/c after mitigation:	0.022
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Gower St			Year of Count:			2017			Ambient Growth: (%):			1			Conducted by:		GTC			Date:		12/1/2016		
15		East-West Street:			Selma Ave			Projection Year:			2023			Peak Hour:			PM			Reviewed by:					Project:		J1522		
No. of Phases					4			4			4			4			4			4			4						
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					2			2			2			2			2			2			2						
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0									
ATSAC-1 or ATSAC+ATCS-2?					0			0			0			0			0			0			0						
Override Capacity					2			2			2			2			2			2			2						
					0			0			0			0			0			0			0						
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION										
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume							
NORTHBOUND	Left	↔	47	1	47	0	47	47	0	50	1	50	0	50	1	50	0	50	1	50	0	50	1	50					
	Left-Through	↔		0							0				0				0			0							
	Through	→	653	1	333	0	653	333	168	861	1	438	0	861	1	438	0	861	1	438	0	861	1	438					
	Through-Right	→		1							1				1				1			1							
	Right	→	13	0	13	0	13	13	0	14	0	14	0	14	0	14	0	14	0	14	0	14	0	14					
	Left-Through-Right	↔		0							0				0				0			0							
Left-Right	↔		0								0				0				0			0							
SOUTHBOUND	Left	↔	25	1	25	0	25	25	0	27	1	27	0	27	1	27	0	27	1	27	0	27	1	27					
	Left-Through	↔		0							0				0				0			0							
	Through	→	550	0	671	0	550	682	71	655	0	783	0	655	0	794	0	655	0	794	0	655	0	794					
	Through-Right	→		1							1				1				1			1							
	Right	→	121	0	0	11	132	0	0	128	0	0	11	139	0	0	0	139	0	0	0	139	0	0					
	Left-Through-Right	↔		0							0				0				0			0							
Left-Right	↔		0							0				0				0			0								
EASTBOUND	Left	↔	47	0	47	3	50	50	0	50	0	50	3	53	0	53	0	53	0	53	0	53	0	53					
	Left-Through	↔		0							0				0				0			0							
	Through	→	4	0	117	0	4	122	0	4	0	124	0	4	0	129	0	4	0	129	0	4	0	129					
	Through-Right	→		0							0				0				0			0							
	Right	→	66	0	0	2	68	0	0	70	0	0	2	72	0	0	0	72	0	0	0	72	0	0					
	Left-Through-Right	↔		1							1				1				1			1							
Left-Right	↔		0							0				0				0			0								
WESTBOUND	Left	↔	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3					
	Left-Through	↔		0							0				0				0			0							
	Through	→	0	0	45	0	0	45	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0	48					
	Through-Right	→		0							0				0				0			0							
	Right	→	42	0	0	0	42	0	0	45	0	0	0	45	0	0	0	45	0	0	0	45	0	0					
	Left-Through-Right	↔		1							1				1				1			1							
Left-Right	↔		0							0				0				0			0								
CRITICAL VOLUMES					North-South: 718			North-South: 729			North-South: 833			North-South: 844			North-South: 844												
					East-West: 162			East-West: 167			East-West: 172			East-West: 177			East-West: 177												
					SUM: 880			SUM: 896			SUM: 1005			SUM: 1021			SUM: 1021												
VOLUME/CAPACITY (V/C) RATIO:					0.640			0.652			0.731			0.743			0.743												
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.540			0.552			0.631			0.643			0.643												
LEVEL OF SERVICE (LOS):					A			A			B			B			B												

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.012	Δv/c after mitigation:	0.012
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Vine St			Year of Count:			2017		Ambient Growth: (%)			1		Conducted by:		GTC		Date:		12/1/2016	
16		East-West Street:			Sunset Blvd			Projection Year:			2023		Peak Hour:			PM		Reviewed by:				Project:		J1522	
No. of Phases					4			4			4			4			4			4					
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0			0			0			0			0			0					
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 3 SB-- 0			NB-- 3 SB-- 0			NB-- 3 SB-- 0			NB-- 3 SB-- 0			NB-- 3 SB-- 0								
ATSAC-1 or ATSAC+ATCS-2?					EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0								
Override Capacity					2			2			2			2			2								
					0			0			0			0			0								
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION						
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume			
NORTHBOUND	Left	99	1	99	0	99	99	13	118	1	118	0	118	1	118	0	118	1	118						
	Left-Through		0							0				0				0							
	Through	949	2	475	4	953	477	79	1086	2	543	4	1090	2	545	0	1090	2	545						
	Through-Right		0							0				0				0							
	Right	162	1	16	0	162	16	74	246	1	23	0	246	1	23	0	246	1	23						
	Left-Through-Right		0							0				0				0							
SOUTHBOUND	Left	154	1	154	0	154	154	83	246	1	246	0	246	1	246	0	246	1	246						
	Left-Through		0							0				0				0							
	Through	981	1	554	1	982	555	89	1130	1	639	1	1131	1	640	0	1131	1	640						
	Through-Right		1							1				1				1							
	Right	127	0	127	0	127	127	13	148	0	148	0	148	0	148	0	148	0	148						
	Left-Through-Right		0							0				0				0							
EASTBOUND	Left	99	1	99	0	99	99	15	120	1	120	0	120	1	120	0	120	1	120						
	Left-Through		0							0				0				0							
	Through	1461	2	522	14	1475	527	275	1826	2	651	14	1840	2	655	0	1840	2	655						
	Through-Right		1							1				1				1							
	Right	106	0	106	0	106	106	13	126	0	126	0	126	0	126	0	126	0	126						
	Left-Through-Right		0							0				0				0							
WESTBOUND	Left	146	1	146	0	146	146	68	223	1	223	0	223	1	223	0	223	1	223						
	Left-Through		0							0				0				0							
	Through	1098	2	401	5	1103	403	310	1476	2	540	5	1481	2	541	0	1481	2	541						
	Through-Right		1							1				1				1							
	Right	105	0	105	0	105	105	32	143	0	143	0	143	0	143	0	143	0	143						
	Left-Through-Right		0							0				0				0							
CRITICAL VOLUMES					North-South: 653			North-South: 654			North-South: 789			North-South: 791			North-South: 791								
					East-West: 668			East-West: 673			East-West: 874			East-West: 878			East-West: 878								
					SUM: 1321			SUM: 1327			SUM: 1663			SUM: 1669			SUM: 1669								
VOLUME/CAPACITY (V/C) RATIO:					0.961			0.965			1.209			1.214			1.214								
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.861			0.865			1.109			1.114			1.114								
LEVEL OF SERVICE (LOS):					D			D			F			F			F								

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.005	Δv/c after mitigation:	0.005
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
17	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	64	1	64	10	74	74	0	68	1	68	10	78	1	78	0	78	1	78	0
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	150	1	76	5	155	74	7	166	1	75	5	171	1	73	0	171	1	73	0
EASTBOUND	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	148	1	148	14	162	162	25	182	1	182	14	196	1	196	0	196	1	196	0
WESTBOUND	Left-Through	1373	3	458	0	1373	458	381	1838	3	613	0	1838	3	613	0	1838	3	613	0
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES	Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	1115	2	404	0	1115	411	414	1598	2	567	0	1598	2	574	0	1598	2	574	0
	Through	98	1	98	20	118	118	0	104	0	104	20	124	0	124	0	124	0	124	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES			North-South: 76	North-South: 74	North-South: 75	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78	North-South: 78
			East-West: 552	East-West: 573	East-West: 749	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770	East-West: 770
			SUM: 628	SUM: 647	SUM: 824	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848	SUM: 848
VOLUME/CAPACITY (V/C) RATIO:			0.419	0.431	0.549	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.319	0.331	0.449	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
LEVEL OF SERVICE (LOS):			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.016	Δv/c after mitigation:	0.016
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	El Centro Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016											
18	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522											
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0												
			2		2		2		2												
			0		0		0		0												
			0		0		0		0												
			0		0		0		0												
			2		2		2		2												
			0		0		0		0												
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	57	0	57	0	57	57	0	61	0	61	0	61	0	61	0	61	0	61	0	61
	Left-Through	154	0	327	6	160	333	2	165	0	349	6	171	0	355	0	171	0	355	0	355
	Through	116	0	0	0	116	0	0	123	0	0	0	123	0	0	0	123	0	0	0	0
	Through-Right		1					1			1			1		1			1		1
	Left-Through-Right		0					0			0			0		0			0		0
SOUTHBOUND	Left	43	0	43	5	48	48	3	49	0	49	5	54	0	54	0	54	0	54	0	54
	Left-Through	54	0	136	0	54	141	1	58	0	148	0	58	0	153	0	58	0	153	0	153
	Through	39	0	0	0	39	0	0	41	0	0	0	41	0	0	0	41	0	0	0	0
	Through-Right		1					1			1			1		1			1		1
	Left-Through-Right		0					0			0			0		0			0		0
EASTBOUND	Left	45	1	45	0	45	45	0	48	1	48	0	48	1	48	0	48	1	48	1	48
	Left-Through	1529	2	532	10	1539	535	486	2109	2	726	10	2119	2	730	0	2119	2	730	2	730
	Through	66	0	66	0	66	66	0	70	0	70	0	70	0	70	0	70	0	70	0	70
	Through-Right		0					0		0	0			0		0		0	0		0
	Left-Through-Right		0					0		0	0			0		0		0	0		0
WESTBOUND	Left	64	1	64	0	64	64	0	68	1	68	0	68	1	68	0	68	1	68	1	68
	Left-Through	1269	2	451	20	1289	459	533	1880	2	657	20	1900	2	666	0	1900	2	666	2	666
	Through	83	0	83	6	89	89	4	92	0	92	6	98	0	98	0	98	0	98	0	98
	Through-Right		0					0		0	0			0		0		0	0		0
	Left-Through-Right		0					0		0	0			0		0		0	0		0
CRITICAL VOLUMES			North-South: 370	East-West: 596	SUM: 966	North-South: 381	East-West: 599	SUM: 980	North-South: 398	East-West: 794	SUM: 1192	North-South: 409	East-West: 798	SUM: 1207	North-South: 409	East-West: 798	SUM: 1207	North-South: 409	East-West: 798	SUM: 1207	
VOLUME/CAPACITY (V/C) RATIO:			0.644			0.653			0.795			0.805			0.805						
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.544			0.553			0.695			0.705			0.705						
LEVEL OF SERVICE (LOS):			A			A			B			C			C						

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.010	Δv/c after mitigation:	0.010
Significant impacted?	NO	Fully mitigated?	N/A

PM.xls

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Bronson Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
20		East-West Street: Sunset Blvd			Projection Year: 2023			Peak Hour: PM			Reviewed by:				Project: J1522				
No. of Phases																			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?																			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?		EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0				
Override Capacity		2			2			2			2		2		2				
		0			0			0			0		0		0				
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	40	1	40	0	40	40	0	42	1	42	0	42	1	42	0	42	1	42
	Left-Through		0							0				0				0	
	Through	323	0	503	0	323	503	24	367	0	558	0	367	0	558	0	367	0	558
	Through-Right		1							1				1				1	
	Right	180	0	0	0	180	0	0	191	0	0	0	191	0	0	0	191	0	0
	Left-Through-Right		0							0				0				0	
SOUTHBOUND	Left	74	1	74	0	74	74	47	126	1	126	0	126	1	126	0	126	1	126
	Left-Through		0							0				0				0	
	Through	211	0	276	0	211	276	22	246	0	355	0	246	0	355	0	246	0	355
	Through-Right		1							1				1				1	
	Right	65	0	0	0	65	0	40	109	0	0	0	109	0	0	0	109	0	0
	Left-Through-Right		0							0				0				0	
EASTBOUND	Left	83	1	83	0	83	83	23	111	1	111	0	111	1	111	0	111	1	111
	Left-Through		0							0				0				0	
	Through	1678	2	567	15	1693	572	429	2210	2	745	15	2225	2	750	0	2225	2	750
	Through-Right		1							1				1				1	
	Right	24	0	24	0	24	24	0	25	0	25	0	25	0	25	0	25	0	25
	Left-Through-Right		0							0				0				0	
WESTBOUND	Left	46	1	46	0	46	46	0	49	1	49	0	49	1	49	0	49	1	49
	Left-Through		0							0				0				0	
	Through	1306	2	460	22	1328	467	443	1829	2	642	22	1851	2	650	0	1851	2	650
	Through-Right		1							1				1				1	
	Right	73	0	73	0	73	73	21	98	0	98	0	98	0	98	0	98	0	98
	Left-Through-Right		0							0				0				0	
CRITICAL VOLUMES		North-South: 577 East-West: 613 SUM: 1190			North-South: 577 East-West: 618 SUM: 1195			North-South: 684 East-West: 794 SUM: 1478				North-South: 684 East-West: 799 SUM: 1483				North-South: 684 East-West: 799 SUM: 1483			
VOLUME/CAPACITY (V/C) RATIO:		0.793			0.797			0.985				0.989				0.989			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.693			0.697			0.885				0.889				0.889			
LEVEL OF SERVICE (LOS):		B			B			D				D				D			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Van Ness Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
21	East-West Street:	Sunest Blvd	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	83	1	83	0	83	83	23	111	1	111	0	111	1	111	0	111	1	111	
	Left-Through	48	0	183	0	48	183	0	51	0	230	0	51	0	230	0	51	0	230	
	Through		1							1				1				1		
	Through-Right	135	0	0	0	135	0	36	179	0	0	0	179	0	0	0	179	0	0	
	Left-Through-Right		0							0				0				0		
SOUTHBOUND	Left	367	1	367	0	367	367	26	416	1	416	0	416	1	416	0	416	1	416	
	Left-Through	266	0	287	0	266	287	15	297	0	319	0	297	0	319	0	297	0	319	
	Through		1							1				1				1		
	Through-Right	21	0	0	0	21	0	0	22	0	0	0	22	0	0	0	22	0	0	
	Left-Through-Right		0							0				0				0		
EASTBOUND	Left	9	1	9	0	9	9	0	10	1	10	0	10	1	10	0	10	1	10	
	Left-Through		0							0				0				0		
	Through	1875	2	634	15	1890	639	463	2453	2	832	15	2468	2	837	0	2468	2	837	
	Through-Right		1							1				1				1		
	Right	28	0	28	0	28	28	12	42	0	42	0	42	0	42	0	42	0	42	
WESTBOUND	Left	71	1	71	0	71	71	7	82	1	82	0	82	1	82	0	82	1	82	
	Left-Through		0							0				0				0		
	Through	1274	2	429	22	1296	436	440	1792	2	602	22	1814	2	609	0	1814	2	609	
	Through-Right		1							1				1				1		
	Right	12	0	12	0	12	12	0	13	0	13	0	13	0	13	0	13	0	13	
CRITICAL VOLUMES			North-South: 550 East-West: 705 SUM: 1255			North-South: 550 East-West: 710 SUM: 1260			North-South: 646 East-West: 914 SUM: 1560				North-South: 646 East-West: 919 SUM: 1565				North-South: 646 East-West: 919 SUM: 1565			
VOLUME/CAPACITY (V/C) RATIO:			0.837			0.840			1.040				1.043				1.043			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.737			0.740			0.940				0.943				0.943			
LEVEL OF SERVICE (LOS):			C			C			E				E				E			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Wilton Pl	Year of Count:	2017	Ambient Growth: (%)	1	Conducted by:	GTC	Date:	12/1/2016										
22	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	103	1	103	0	103	103	3	112	1	112	0	112	1	112	0	112	1	112	
	Left-Through		0							0				0				0		
	Through	391	1	291	0	391	291	2	417	1	310	0	417	1	310	0	417	1	310	
	Through-Right		1							1				1				1		
	Right	190	0	190	0	190	190	0	202	0	202	0	202	0	202	0	202	0	202	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	80	1	80	0	80	80	48	133	1	133	0	133	1	133	0	133	1	133	
	Left-Through		0							0				0				0		
	Through	383	1	239	0	383	239	1	408	1	256	0	408	1	256	0	408	1	256	
	Through-Right		1							1				1				1		
	Right	95	0	95	0	95	95	2	103	0	103	0	103	0	103	0	103	0	103	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	90	1	90	0	90	90	2	98	1	98	0	98	1	98	0	98	1	98	
	Left-Through		0							0				0				0		
	Through	1500	2	554	3	1503	555	254	1846	2	675	3	1849	2	676	0	1849	2	676	
	Through-Right		1							1				1				1		
	Right	163	0	163	0	163	163	7	180	0	180	0	180	0	180	0	180	0	180	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	82	1	82	0	82	82	1	88	1	88	0	88	1	88	0	88	1	88	
	Left-Through		0							0				0				0		
	Through	1123	2	562	6	1129	565	237	1429	2	715	6	1435	2	718	0	1435	2	718	
	Through-Right		0							0				0				0		
	Right	150	1	110	0	150	110	21	180	1	114	0	180	1	114	0	180	1	114	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 371 East-West: 652 SUM: 1023	North-South: 371 East-West: 655 SUM: 1026	North-South: 443 East-West: 813 SUM: 1256	North-South: 443 East-West: 816 SUM: 1259	North-South: 443 East-West: 816 SUM: 1259	North-South: 443 East-West: 816 SUM: 1259	North-South: 443 East-West: 816 SUM: 1259											
VOLUME/CAPACITY (V/C) RATIO:			0.682	0.684	0.837	0.839	0.839	0.839												
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.582	0.584	0.737	0.739	0.739													
LEVEL OF SERVICE (LOS):			A	A	C	C	C													

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExAM.pdf

Scenario 1: Ex AM
5/19/2017

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.279	22.4	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.623	23.6	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.074	8.2	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.556	27.7	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.103	76.1	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.061	28.3	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		13.1	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		13.0	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.266	32.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.279

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	113	0	242	386	0	44	0	0	898	0	130	1448
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	0	242	386	0	44	0	0	898	0	130	1448
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	61	97	0	11	0	0	225	0	33	362
Total Analysis Volume [veh/h]	113	0	242	386	0	44	0	0	898	0	130	1448
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	0	45	0	45	0	0	65	0	20	25
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	22	22	57	30	82
g / C, Green / Cycle	0.28	0.28	0.25	0.25	0.63	0.34	0.91
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.11	0.03	0.25	0.07	0.91
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	502	448	877	391	2228	627	1443
d1, Uniform Delay [s]	24.73	27.33	28.63	26.25	8.33	21.30	2.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.04	4.62	0.35	0.13	0.12	0.16	24.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.54	0.44	0.11	0.40	0.21	1.00
d, Delay for Lane Group [s/veh]	25.76	31.95	28.98	26.37	8.45	21.46	27.50
Lane Group LOS	C	C	C	C	A	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.96	4.87	3.50	0.74	3.89	1.94	9.85
50th-Percentile Queue Length [ft]	49.04	121.86	87.42	18.39	97.23	48.54	246.31
95th-Percentile Queue Length [veh]	3.53	8.50	6.29	1.32	7.00	3.50	15.05
95th-Percentile Queue Length [ft]	88.26	212.38	157.35	33.10	175.02	87.38	376.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.76	0.00	31.95	28.98	0.00	26.37	0.00	0.00	8.45	0.00	21.46	27.50
Movement LOS	C		C	C		C			A		C	F
d_A, Approach Delay [s/veh]	29.98			28.71			8.45			27.00		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	22.44											
Intersection LOS	C											
Intersection V/C	0.279											

Sequence




Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	208	21	36	72	117	66	187	429	103	138	857	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	208	21	36	72	117	66	187	429	103	138	857	663
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	5	9	18	29	17	47	107	26	35	214	166
Total Analysis Volume [veh/h]	208	21	36	72	117	66	187	429	103	138	857	663
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	20	0	36	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	8	8	8	62	49	49	9	53	53
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.09	0.69	0.55	0.55	0.10	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.02	0.04	0.06	0.04	0.36	0.12	0.07	0.08	0.42	0.45
s, saturation flow rate [veh/h]	1774	1790	1583	1774	1863	1583	517	3547	1583	1774	1863	1606
c, Capacity [veh/h]	157	158	140	156	164	139	353	1939	865	177	1088	938
d1, Uniform Delay [s]	40.06	40.06	38.36	39.09	40.02	39.14	16.44	10.55	9.92	39.62	13.54	14.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.35	6.26	0.96	2.12	5.67	2.49	5.60	0.26	0.28	7.24	4.23	6.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

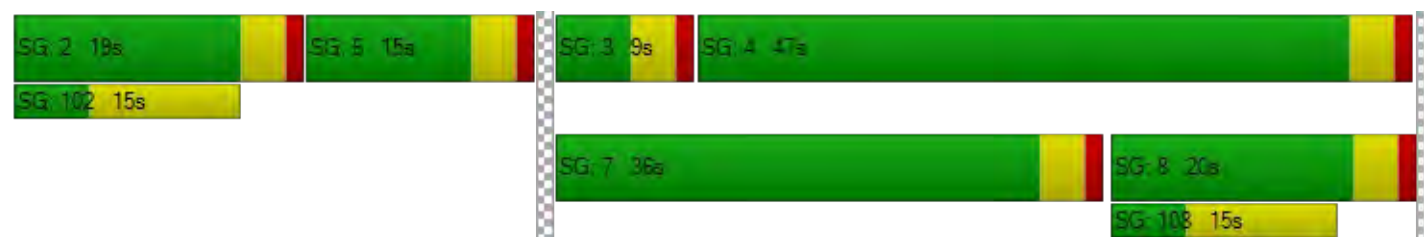
X, volume / capacity	0.73	0.73	0.26	0.46	0.71	0.47	0.53	0.22	0.12	0.78	0.73	0.78
d, Delay for Lane Group [s/veh]	46.41	46.32	39.32	41.21	45.69	41.62	22.05	10.81	10.20	46.86	17.77	20.67
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.71	2.72	0.77	1.59	2.75	1.47	1.56	2.13	1.00	3.30	11.54	11.70
50th-Percentile Queue Length [ft]	67.72	68.10	19.31	39.72	68.71	36.75	38.99	53.19	24.90	82.44	288.62	292.45
95th-Percentile Queue Length [veh]	4.88	4.90	1.39	2.86	4.95	2.65	2.81	3.83	1.79	5.94	17.12	17.31
95th-Percentile Queue Length [ft]	121.89	122.58	34.75	71.49	123.69	66.15	70.19	95.74	44.82	148.39	427.93	432.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.37	46.32	39.32	41.21	45.69	41.62	22.05	10.81	10.20	46.86	18.00	20.67
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	45.41			43.37			13.64			21.47		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	23.65											
Intersection LOS	C											
Intersection V/C	0.623											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	288	43	91	204	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	288	43	91	204	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	11	23	51	0	0
Total Analysis Volume [veh/h]	288	43	91	204	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.07	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.17	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.24	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	6.01	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.52		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.19					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	27.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	543	0	0	420	192	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	543	0	0	420	192	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	0	0	105	48	22
Total Analysis Volume [veh/h]	543	0	0	420	192	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.56	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	27.69	10.65
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	3.21	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	80.33	10.42
d_A, Approach Delay [s/veh]	0.00		0.00		22.29	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.04					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 76.1
 Level Of Service: F
 Volume to Capacity (v/c): 0.103

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	342	29	24	585	0	214	24	554	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	342	29	24	585	0	214	24	554	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	86	7	6	146	0	54	6	139	0	0	0
Total Analysis Volume [veh/h]	0	342	29	24	585	0	214	24	554	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	0.80	0.10	0.79	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.10	0.00	0.00	74.12	76.12	26.28	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	D			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.03	0.51	0.00	7.97	7.90	7.82	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	25.72	12.86	0.00	199.37	197.45	195.52	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.32			40.72			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	18.31											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	28.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	26	355	903	169	10	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	355	903	169	10	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	89	226	42	3	6
Total Analysis Volume [veh/h]	26	355	903	169	10	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.01	0.00	0.06	0.04
d_M, Delay for Movement [s/veh]	10.81	0.00	0.00	0.00	28.30	13.77
Movement LOS	B	A	A	A	D	B
95th-Percentile Queue Length [veh]	1.23	0.61	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	30.71	15.35	0.00	0.00	8.78	8.78
d_A, Approach Delay [s/veh]	0.74		0.00		18.31	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.58					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

13.1
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	34	0	882	41	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	0	882	41	0	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	221	10	0	6
Total Analysis Volume [veh/h]	34	0	882	41	0	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.12	3.92	3.82	0.07
95th-Percentile Queue Length [ft]	3.08	98.11	95.44	1.67
Approach Delay [s/veh]	7.35	13.51		6.49
Approach LOS	A	B		A
Intersection Delay [s/veh]	13.13			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 13.0
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	80	8	3	94	0	2	0	0	0	0
Total Analysis Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.22	1.17	3.67	
95th-Percentile Queue Length [ft]	30.46	29.33	91.83	
Approach Delay [s/veh]	10.76		15.20	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	13.02			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	173	0	5	70	0	60	22	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	0	5	70	0	60	22	259
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	0	1	18	0	15	6	65
Total Analysis Volume [veh/h]	173	0	5	70	0	60	22	259
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.89	0.59	2.31
95th-Percentile Queue Length [ft]	47.18	14.84	57.72
Approach Delay [s/veh]	12.44	13.33	
Approach LOS	B	B	
Intersection Delay [s/veh]	13.02		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	32.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.266

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1448	236	48	1954
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1448	236	48	1954
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	362	59	12	489
Total Analysis Volume [veh/h]	0	0	1448	236	48	1954
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.27	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	32.03	0.00
Movement LOS			A	A	D	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.02	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	25.60	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.77	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	D					

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExPAM.pdf

Scenario 3: ExP AM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.278	22.9	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.631	24.3	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.076	8.2	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.564	28.3	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.104	78.6	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.061	28.5	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		13.1	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		13.0	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.276	33.5	D




V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1454
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1454
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	61	97	0	11	0	0	226	0	33	364
Total Analysis Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1454
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	0	45	0	45	0	0	65	0	20	25
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	22	22	57	30	82
g / C, Green / Cycle	0.28	0.28	0.25	0.25	0.63	0.34	0.91
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.11	0.03	0.25	0.07	0.92
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	498	444	882	394	2236	628	1443
d1, Uniform Delay [s]	24.88	27.50	28.52	26.13	8.25	21.26	2.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.06	4.73	0.34	0.12	0.12	0.16	25.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.54	0.44	0.11	0.40	0.21	1.01
d, Delay for Lane Group [s/veh]	25.94	32.23	28.86	26.26	8.37	21.42	28.53
Lane Group LOS	C	C	C	C	A	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.97	4.90	3.50	0.73	3.88	1.94	10.27
50th-Percentile Queue Length [ft]	49.24	122.51	87.45	18.34	97.09	48.48	256.69
95th-Percentile Queue Length [veh]	3.55	8.53	6.30	1.32	6.99	3.49	15.63
95th-Percentile Queue Length [ft]	88.64	213.26	157.40	33.01	174.77	87.27	390.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.94	0.00	32.23	28.86	0.00	26.26	0.00	0.00	8.37	0.00	21.42	28.53
Movement LOS	C		C	C		C			A		C	F
d_A, Approach Delay [s/veh]	30.23			28.60			8.37			27.95		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	22.88											
Intersection LOS	C											
Intersection V/C	0.278											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	232	21	36	72	117	66	187	429	104	138	857	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	232	21	36	72	117	66	187	429	104	138	857	663
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	5	9	18	29	17	47	107	26	35	214	166
Total Analysis Volume [veh/h]	232	21	36	72	117	66	187	429	104	138	857	663
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	20	0	36	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	9	8	8	8	62	49	49	9	52	52
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.09	0.68	0.54	0.54	0.10	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.02	0.04	0.06	0.04	0.36	0.12	0.07	0.08	0.42	0.45
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	520	3547	1583	1774	1863	1606
c, Capacity [veh/h]	169	171	151	156	164	139	349	1914	854	177	1074	926
d1, Uniform Delay [s]	39.72	39.71	37.75	39.11	40.03	39.15	16.76	10.88	10.23	39.62	14.04	14.84
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.35	6.28	0.80	2.13	5.72	2.50	5.77	0.27	0.29	7.24	4.49	6.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.74	0.24	0.46	0.72	0.47	0.54	0.22	0.12	0.78	0.74	0.79
d, Delay for Lane Group [s/veh]	46.07	45.99	38.56	41.23	45.75	41.65	22.54	11.15	10.52	46.86	18.53	21.64
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.98	3.00	0.76	1.59	2.75	1.47	1.61	2.17	1.03	3.30	11.87	12.05
50th-Percentile Queue Length [ft]	74.54	74.95	19.05	39.73	68.77	36.77	40.19	54.30	25.68	82.44	296.70	301.17
95th-Percentile Queue Length [veh]	5.37	5.40	1.37	2.86	4.95	2.65	2.89	3.91	1.85	5.94	17.52	17.74
95th-Percentile Queue Length [ft]	134.17	134.91	34.29	71.52	123.78	66.18	72.35	97.73	46.22	148.39	437.95	443.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.03	45.99	38.56	41.23	45.75	41.65	22.54	11.15	10.52	46.86	18.77	21.64
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	45.10			43.41			14.02			22.26		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	24.33											
Intersection LOS	C											
Intersection V/C	0.631											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	312	43	91	205	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	43	91	205	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	11	23	51	0	0
Total Analysis Volume [veh/h]	312	43	91	205	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.24	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.25	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	6.14	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.53		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	28.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	549	0	0	422	193	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	549	0	0	422	193	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	0	0	106	48	22
Total Analysis Volume [veh/h]	549	0	0	422	193	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.56	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	28.32	10.68
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	3.30	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	82.51	10.47
d_A, Approach Delay [s/veh]	0.00		0.00		22.75	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.12					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	78.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.104

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	348	29	24	588	0	214	24	554	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	348	29	24	588	0	214	24	554	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	87	7	6	147	0	54	6	139	0	0	0
Total Analysis Volume [veh/h]	0	348	29	24	588	0	214	24	554	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	0.81	0.10	0.79	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.12	0.00	0.00	76.57	78.63	26.46	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	D			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.04	0.52	0.00	8.12	7.99	7.87	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	26.07	13.03	0.00	202.98	199.81	196.64	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.32			41.58			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	18.60											
Intersection LOS	F											




Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 28.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.061

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	26	361	906	169	10	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	361	906	169	10	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	90	227	42	3	6
Total Analysis Volume [veh/h]	26	361	906	169	10	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.01	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	10.82	0.00	0.00	0.00	28.53	13.80
Movement LOS	B	A	A	A	D	B
95th-Percentile Queue Length [veh]	1.26	0.63	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	31.49	15.74	0.00	0.00	8.85	8.85
d_A, Approach Delay [s/veh]	0.73		0.00		18.40	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.58					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

13.1
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	34	0	882	41	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	0	882	41	0	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	221	10	0	6
Total Analysis Volume [veh/h]	34	0	882	41	0	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.12	3.92	3.82	0.07
95th-Percentile Queue Length [ft]	3.08	98.11	95.44	1.67
Approach Delay [s/veh]	7.35	13.51		6.49
Approach LOS	A	B		A
Intersection Delay [s/veh]	13.13			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 13.0
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	80	8	3	94	0	2	0	0	0	0
Total Analysis Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.22	1.17	3.67	
95th-Percentile Queue Length [ft]	30.46	29.33	91.83	
Approach Delay [s/veh]	10.76		15.20	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	13.02			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	173	0	5	70	0	60	22	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	0	5	70	0	60	22	259
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	0	1	18	0	15	6	65
Total Analysis Volume [veh/h]	173	0	5	70	0	60	22	259
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	1.89	0.59	2.31
95th-Percentile Queue Length [ft]	47.18	14.84	57.72
Approach Delay [s/veh]	12.44	13.33	
Approach LOS	B	B	
Intersection Delay [s/veh]	13.02		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 33.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.276

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1454	263	48	1961
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1454	263	48	1961
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	364	66	12	490
Total Analysis Volume [veh/h]	0	0	1454	263	48	1961
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.28	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	33.45	0.00
Movement LOS			A	A	D	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.07	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	26.81	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	D					

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExPM.pdf

Scenario 2: Ex PM
5/19/2017

Intersection Analysis Summary



ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.556	18.7	B
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.652	25.2	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.088	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.264	31.2	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Left	0.849	65.4	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.253	31.5	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		10.3	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.6	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.447	74.4	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	466	0	360	528	0	58	0	0	594	0	291	852
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	466	0	360	528	0	58	0	0	594	0	291	852
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	0	90	132	0	15	0	0	149	0	73	213
Total Analysis Volume [veh/h]	466	0	360	528	0	58	0	0	594	0	291	852
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	0	56	0	56	0	0	75	0	19	15
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	19	19	43	19	82
g / C, Green / Cycle	0.44	0.44	0.22	0.22	0.47	0.21	0.91
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.15	0.04	0.17	0.16	0.54
s, saturation flow rate [veh/h]	1774	1601	3547	1583	3547	1863	1583
c, Capacity [veh/h]	776	700	766	342	1681	398	1443
d1, Uniform Delay [s]	18.76	19.05	32.53	28.74	14.97	33.01	0.38
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.77	3.40	1.12	0.23	0.13	2.60	1.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.57	0.69	0.17	0.35	0.73	0.59
d, Delay for Lane Group [s/veh]	21.52	22.45	33.65	28.97	15.10	35.62	2.17
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh]	6.83	6.65	5.31	1.03	3.70	6.08	0.71
50th-Percentile Queue Length [ft]	170.79	166.34	132.73	25.74	92.50	152.00	17.86
95th-Percentile Queue Length [veh]	11.12	10.88	9.09	1.85	6.66	10.12	1.29
95th-Percentile Queue Length [ft]	277.96	272.10	227.20	46.33	166.49	253.10	32.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.62	0.00	22.45	33.65	0.00	28.97	0.00	0.00	15.10	0.00	35.62	2.17
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	21.97			33.19			15.10			10.68		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.66											
Intersection LOS	B											
Intersection V/C	0.556											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	441	40	136	48	73	39	186	902	62	101	557	682
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	441	40	136	48	73	39	186	902	62	101	557	682
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	10	34	12	18	10	47	226	16	25	139	171
Total Analysis Volume [veh/h]	441	40	136	48	73	39	186	902	62	101	557	682
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	15	0	10	19	0	29	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	5	58	47	47	7	48	48
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.52	0.52	0.07	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.14	0.13	0.09	0.03	0.04	0.02	0.29	0.25	0.04	0.06	0.30	0.43
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	635	3547	1583	1774	1863	1583
c, Capacity [veh/h]	295	297	263	107	112	95	361	1848	825	133	983	836
d1, Uniform Delay [s]	36.20	36.20	34.26	40.89	41.40	40.78	16.51	13.86	10.75	40.88	14.33	17.65
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.38	5.32	1.57	2.93	6.20	2.79	5.16	0.93	0.18	8.60	2.37	8.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.81	0.52	0.45	0.65	0.41	0.51	0.49	0.08	0.76	0.57	0.82
d, Delay for Lane Group [s/veh]	41.58	41.52	35.83	43.82	47.60	43.57	21.67	14.78	10.93	49.48	16.70	26.31
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.42	5.46	2.79	1.10	1.76	0.90	1.79	5.73	0.63	2.49	7.72	12.68
50th-Percentile Queue Length [ft]	135.52	136.41	69.74	27.62	44.02	22.47	44.63	143.15	15.65	62.19	193.06	316.99
95th-Percentile Queue Length [veh]	9.24	9.29	5.02	1.99	3.17	1.62	3.21	9.65	1.13	4.48	12.28	18.52
95th-Percentile Queue Length [ft]	230.98	232.18	125.53	49.71	79.23	40.44	80.33	241.25	28.18	111.94	307.00	462.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.55	41.52	35.83	43.82	47.60	43.57	21.67	14.78	10.93	49.48	16.70	26.31
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	40.29			45.49			15.69			24.06		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	25.23											
Intersection LOS	C											
Intersection V/C	0.652											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	674	90	74	123	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	674	90	74	123	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	169	23	19	31	0	0
Total Analysis Volume [veh/h]	674	90	74	123	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.67	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.18	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.63		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	31.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.264

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1031	0	0	279	49	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1031	0	0	279	49	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	258	0	0	70	12	21
Total Analysis Volume [veh/h]	1031	0	0	279	49	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.26	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	31.18	13.56
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.01	0.59
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	25.36	14.82
d_A, Approach Delay [s/veh]	0.00		0.00		20.05	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.85					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	65.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	737	15	11	315	0	271	13	279	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	737	15	11	315	0	271	13	279	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	184	4	3	79	0	68	3	70	0	0	0
Total Analysis Volume [veh/h]	0	737	15	11	315	0	271	13	279	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.00	0.00	0.85	0.06	0.32	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.27	0.00	0.00	65.44	62.21	11.35	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.70	0.35	0.00	8.49	4.99	1.49	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	17.56	8.78	0.00	212.16	124.68	37.21	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.31			38.56			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	13.29											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	31.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.253

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	82	755	542	45	44	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	755	542	45	44	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	189	136	11	11	12
Total Analysis Volume [veh/h]	82	755	542	45	44	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	0.25	0.07
d_M, Delay for Movement [s/veh]	8.99	0.00	0.00	0.00	31.53	15.96
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	2.15	1.08	0.00	0.00	1.34	1.34
95th-Percentile Queue Length [ft]	53.86	26.93	0.00	0.00	33.41	33.41
d_A, Approach Delay [s/veh]	0.88		0.00		23.49	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.90					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

10.3
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	111	0	671	3	0	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	0	671	3	0	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	168	1	0	6
Total Analysis Volume [veh/h]	111	0	671	3	0	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.44	2.22	2.22	0.08
95th-Percentile Queue Length [ft]	11.05	55.61	55.49	1.91
Approach Delay [s/veh]	7.80	10.88		6.68
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.33			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.6
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	12	7	1	8	0	4	0	0	0	0
Total Analysis Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.16	0.18	
95th-Percentile Queue Length [ft]	4.69	4.12	4.55	
Approach Delay [s/veh]	7.63		7.47	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.64			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	78	0	2	32	0	14	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	2	32	0	14	9	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	1	8	0	4	2	12
Total Analysis Volume [veh/h]	78	0	2	32	0	14	9	49
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.45	0.10	0.18
95th-Percentile Queue Length [ft]	11.24	2.59	4.57
Approach Delay [s/veh]	7.84	7.48	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.64		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	74.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1950	335	40	1519
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1950	335	40	1519
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	488	84	10	380
Total Analysis Volume [veh/h]	0	0	1950	335	40	1519
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.45	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	74.44	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.87	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	46.63	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.91	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.77					
Intersection LOS	F					

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExPPM.pdf

Scenario 4: ExP PM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.557	18.6	B
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.656	25.5	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.088	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.293	32.5	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Left	0.867	70.1	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.258	32.2	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		10.3	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.6	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.456	76.6	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	0	90	133	0	15	0	0	149	0	73	218
Total Analysis Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	0	56	0	56	0	0	75	0	19	15
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	20	20	43	19	82
g / C, Green / Cycle	0.43	0.43	0.22	0.22	0.48	0.21	0.91
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.15	0.04	0.17	0.16	0.55
s, saturation flow rate [veh/h]	1774	1601	3547	1583	3547	1863	1583
c, Capacity [veh/h]	769	694	776	346	1695	400	1443
d1, Uniform Delay [s]	19.02	19.32	32.35	28.54	14.76	32.92	0.39
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.85	3.50	1.09	0.23	0.12	2.54	1.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.58	0.69	0.17	0.35	0.73	0.60
d, Delay for Lane Group [s/veh]	21.87	22.82	33.44	28.76	14.88	35.45	2.28
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	6.90	6.72	5.34	1.02	3.69	6.06	0.75
50th-Percentile Queue Length [ft]	172.48	168.03	133.59	25.62	92.16	151.61	18.84
95th-Percentile Queue Length [veh]	11.21	10.97	9.13	1.84	6.64	10.10	1.36
95th-Percentile Queue Length [ft]	280.17	274.32	228.37	46.12	165.88	252.58	33.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.97	0.00	22.82	33.44	0.00	28.76	0.00	0.00	14.88	0.00	35.45	2.28
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	22.33			32.98			14.88			10.58		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.62											
Intersection LOS	B											
Intersection V/C	0.557											

Sequence


Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	452	40	136	48	73	39	186	902	67	101	557	682
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	452	40	136	48	73	39	186	902	67	101	557	682
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	10	34	12	18	10	47	226	17	25	139	171
Total Analysis Volume [veh/h]	452	40	136	48	73	39	186	902	67	101	557	682
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	15	0	10	19	0	29	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	5	57	47	47	7	47	47
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.52	0.52	0.07	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.14	0.14	0.09	0.03	0.04	0.02	0.29	0.25	0.04	0.06	0.30	0.43
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	636	3547	1583	1774	1863	1583
c, Capacity [veh/h]	300	303	268	107	112	95	359	1837	820	133	977	830
d1, Uniform Delay [s]	36.07	36.06	34.00	40.89	41.41	40.79	16.69	14.03	10.93	40.88	14.54	17.90
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.40	5.34	1.48	2.93	6.21	2.79	5.25	0.94	0.20	8.60	2.42	8.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.82	0.51	0.45	0.65	0.41	0.52	0.49	0.08	0.76	0.57	0.82
d, Delay for Lane Group [s/veh]	41.46	41.40	35.49	43.82	47.62	43.58	21.93	14.98	11.12	49.48	16.95	26.87
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.54	5.58	2.77	1.10	1.76	0.90	1.81	5.77	0.68	2.49	7.80	12.84
50th-Percentile Queue Length [ft]	138.54	139.41	69.35	27.62	44.02	22.47	45.17	144.37	17.12	62.19	194.97	320.99
95th-Percentile Queue Length [veh]	9.40	9.45	4.99	1.99	3.17	1.62	3.25	9.72	1.23	4.48	12.38	18.72
95th-Percentile Queue Length [ft]	235.06	236.23	124.82	49.72	79.24	40.45	81.31	242.89	30.81	111.94	309.46	467.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.44	41.40	35.49	43.82	47.62	43.58	21.93	14.98	11.12	49.48	16.95	26.87
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	40.15			45.49			15.87			24.45		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	25.46											
Intersection LOS	C											
Intersection V/C	0.656											

Sequence


Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	684	90	74	128	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	684	90	74	128	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	171	23	19	32	0	0
Total Analysis Volume [veh/h]	684	90	74	128	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.72	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.25	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.56		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	32.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.293

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1034	0	0	285	54	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1034	0	0	285	54	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	259	0	0	71	14	21
Total Analysis Volume [veh/h]	1034	0	0	285	54	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.29	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	32.47	13.58
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.16	0.59
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	29.05	14.86
d_A, Approach Delay [s/veh]	0.00		0.00		20.97	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 70.1
 Level Of Service: F
 Volume to Capacity (v/c): 0.867

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	185	4	3	82	0	68	3	70	0	0	0
Total Analysis Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.00	0.00	0.87	0.06	0.33	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.28	0.00	0.00	70.09	66.12	11.43	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.73	0.37	0.00	8.82	5.16	1.51	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	18.35	9.18	0.00	220.52	129.10	37.67	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.30			40.93			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	13.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	32.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.258

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	82	758	553	45	44	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	758	553	45	44	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	190	138	11	11	12
Total Analysis Volume [veh/h]	82	758	553	45	44	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	0.26	0.07
d_M, Delay for Movement [s/veh]	9.03	0.00	0.00	0.00	32.23	16.26
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	2.20	1.10	0.00	0.00	1.37	1.37
95th-Percentile Queue Length [ft]	55.03	27.52	0.00	0.00	34.24	34.24
d_A, Approach Delay [s/veh]	0.88		0.00		23.99	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

10.3
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	111	0	671	3	0	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	0	671	3	0	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	168	1	0	6
Total Analysis Volume [veh/h]	111	0	671	3	0	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.44	2.22	2.22	0.08
95th-Percentile Queue Length [ft]	11.05	55.61	55.49	1.91
Approach Delay [s/veh]	7.80	10.88		6.68
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.33			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.6
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	12	7	1	8	0	4	0	0	0	0
Total Analysis Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.16	0.18	
95th-Percentile Queue Length [ft]	4.69	4.12	4.55	
Approach Delay [s/veh]	7.63		7.47	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.64			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	78	0	2	32	0	14	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	2	32	0	14	9	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	1	8	0	4	2	12
Total Analysis Volume [veh/h]	78	0	2	32	0	14	9	49
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.45	0.10	0.18
95th-Percentile Queue Length [ft]	11.24	2.59	4.57
Approach Delay [s/veh]	7.84	7.48	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.64		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 76.6
 Level Of Service: F
 Volume to Capacity (v/c): 0.456

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1953	348	40	1541
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1953	348	40	1541
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	488	87	10	385
Total Analysis Volume [veh/h]	0	0	1953	348	40	1541
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.46	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	76.61	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.91	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	47.64	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.94	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	F					

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\FB2023AM.pdf

Scenario 5: FB 2023 AM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.535	45.1	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	0.738	39.4	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.095	8.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.815	52.7	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.132	162.6	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.089	36.7	E
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		14.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		14.3	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.574	73.9	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	45.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	131	0	293	473	0	61	0	0	984	0	138	1622
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	0	293	473	0	61	0	0	984	0	138	1622
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	0	73	118	0	15	0	0	246	0	35	406
Total Analysis Volume [veh/h]	131	0	293	473	0	61	0	0	984	0	138	1622
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.16	0.16	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.07	0.19	0.13	0.04	0.28	0.07	1.02
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	847	585	261	1335	311	1443
d1, Uniform Delay [s]	10.52	11.96	36.20	32.63	24.22	33.73	3.28
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	1.12	2.71	0.45	0.81	0.99	65.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.35	0.81	0.23	0.74	0.44	1.12
d, Delay for Lane Group [s/veh]	10.83	13.08	38.91	33.08	25.03	34.72	68.86
Lane Group LOS	B	B	D	C	C	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.32	3.41	5.13	1.17	8.79	2.76	26.28
50th-Percentile Queue Length [ft]	33.00	85.37	128.26	29.36	219.79	68.94	657.02
95th-Percentile Queue Length [veh]	2.38	6.15	8.85	2.11	13.65	4.96	38.48
95th-Percentile Queue Length [ft]	59.39	153.67	221.13	52.85	341.35	124.09	962.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.83	0.00	13.08	38.91	0.00	33.08	0.00	0.00	25.03	0.00	34.72	68.86
Movement LOS	B		B	D		C			C		C	F
d_A, Approach Delay [s/veh]	12.38			38.25			25.03			66.18		
Approach LOS	B			D			C			E		
d_I, Intersection Delay [s/veh]	45.05											
Intersection LOS	D											
Intersection V/C	0.535											

Sequence


Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	39.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	288	23	38	76	125	70	265	481	115	146	947	733
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	288	23	38	76	125	70	265	481	115	146	947	733
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	6	10	19	31	18	66	120	29	37	237	183
Total Analysis Volume [veh/h]	288	23	38	76	125	70	265	481	115	146	947	733
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	21	0	35	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	8	8	8	60	46	46	9	45	45
g / C, Green / Cycle	0.11	0.11	0.11	0.09	0.09	0.09	0.66	0.51	0.51	0.10	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.02	0.04	0.07	0.04	0.44	0.14	0.07	0.08	0.46	0.51
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	602	3547	1583	1774	1863	1610
c, Capacity [veh/h]	199	201	178	163	171	146	370	1821	813	186	936	809
d1, Uniform Delay [s]	38.93	38.93	36.40	38.85	39.86	38.90	25.89	12.35	11.51	39.37	20.65	22.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.41	6.35	0.59	2.06	5.86	2.45	11.23	0.35	0.36	7.12	14.77	36.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

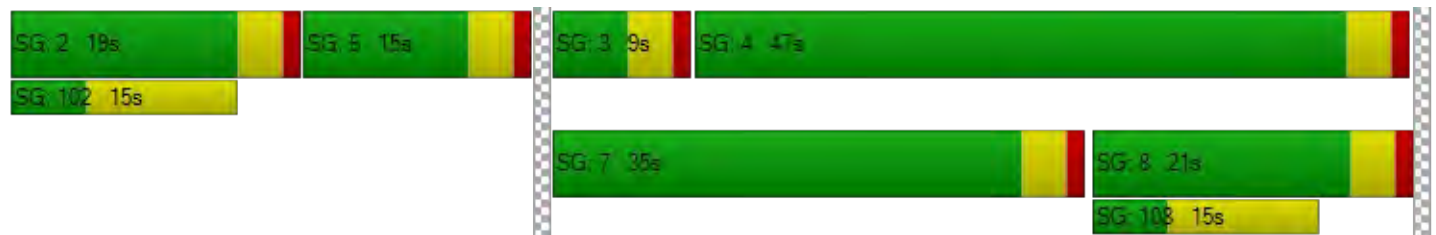
X, volume / capacity	0.78	0.78	0.21	0.47	0.73	0.48	0.72	0.26	0.14	0.79	0.91	1.02
d, Delay for Lane Group [s/veh]	45.34	45.28	36.99	40.91	45.72	41.35	37.12	12.70	11.87	46.49	35.41	59.23
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.64	3.66	0.78	1.67	2.94	1.55	2.88	2.67	1.23	3.48	18.98	23.84
50th-Percentile Queue Length [ft]	91.00	91.52	19.56	41.74	73.46	38.82	72.03	66.64	30.76	86.88	474.48	595.89
95th-Percentile Queue Length [veh]	6.55	6.59	1.41	3.01	5.29	2.79	5.19	4.80	2.21	6.26	26.12	32.35
95th-Percentile Queue Length [ft]	163.80	164.73	35.21	75.13	132.22	69.87	129.65	119.96	55.37	156.38	653.10	808.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.31	45.28	36.99	40.91	45.72	41.35	37.12	12.70	11.87	46.49	37.73	59.23
Movement LOS	D	D	D	D	D	D	D	B	B	D	D	E
d_A, Approach Delay [s/veh]	44.40			43.24			20.11			47.06		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	39.45											
Intersection LOS	D											
Intersection V/C	0.738											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.095

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	374	96	103	219	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	374	96	103	219	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	24	26	55	0	0
Total Analysis Volume [veh/h]	374	96	103	219	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.65	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.31	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.82	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.77		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.13					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	52.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.815

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	607	0	0	453	250	105
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	607	0	0	453	250	105
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	0	0	113	63	26
Total Analysis Volume [veh/h]	607	0	0	453	250	105
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.81	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	52.73	11.13
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.76	0.53
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	168.96	13.31
d_A, Approach Delay [s/veh]	0.00		0.00		40.42	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	10.14					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	162.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.132

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	394	31	25	674	0	227	25	641	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	394	31	25	674	0	227	25	641	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	99	8	6	169	0	57	6	160	0	0	0
Total Analysis Volume [veh/h]	0	394	31	25	674	0	227	25	641	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	1.04	0.13	0.97	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.26	0.00	0.00	160.08	162.61	53.67	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.32	0.66	0.00	12.24	13.34	14.43	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	33.10	16.55	0.00	306.05	333.41	360.77	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.30			83.77			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	37.19											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	36.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	31	408	1001	244	11	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	408	1001	244	11	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	102	250	61	3	7
Total Analysis Volume [veh/h]	31	408	1001	244	11	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.00	0.09	0.06
d_M, Delay for Movement [s/veh]	11.87	0.00	0.00	0.00	36.65	15.94
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh]	1.88	0.94	0.00	0.00	0.53	0.53
95th-Percentile Queue Length [ft]	46.97	23.49	0.00	0.00	13.16	13.16
d_A, Approach Delay [s/veh]	0.84		0.00		21.94	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	E					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

14.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	37	0	958	44	0	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	0	958	44	0	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	240	11	0	6
Total Analysis Volume [veh/h]	37	0	958	44	0	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.13	4.71	4.58	0.07
95th-Percentile Queue Length [ft]	3.36	117.81	114.40	1.75
Approach Delay [s/veh]	7.37	14.91		6.50
Approach LOS	A	B		A
Intersection Delay [s/veh]	14.46			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 14.3
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	86	9	3	101	0	2	0	0	0	0
Total Analysis Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.40	1.34	4.55	
95th-Percentile Queue Length [ft]	34.89	33.59	113.64	
Approach Delay [s/veh]	11.30		17.38	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	14.32			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	184	0	5	74	0	64	23	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	0	5	74	0	64	23	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	0	1	19	0	16	6	70
Total Analysis Volume [veh/h]	184	0	5	74	0	64	23	281
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.16	0.66	2.84
95th-Percentile Queue Length [ft]	54.12	16.57	70.95
Approach Delay [s/veh]	13.30	14.77	
Approach LOS	B	B	
Intersection Delay [s/veh]	14.32		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	73.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1651	447	64	2498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1651	447	64	2498
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	413	112	16	625
Total Analysis Volume [veh/h]	0	0	1651	447	64	2498
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.57	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	73.85	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.76	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	69.01	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.84	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.01					
Intersection LOS	F					

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\FB2023PM.pdf

Scenario 6: FB 2023 PM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.674	20.4	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	0.782	41.6	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.127	10.7	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.833	92.9	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.089	196.4	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.396	50.5	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		11.0	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.8	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.539	492.7	F




V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	518	0	437	669	0	81	0	0	678	0	309	1022
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	0	437	669	0	81	0	0	678	0	309	1022
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	0	109	167	0	20	0	0	170	0	77	256
Total Analysis Volume [veh/h]	518	0	437	669	0	81	0	0	678	0	309	1022
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	36	22	22	46	20	82
g / C, Green / Cycle	0.40	0.40	0.25	0.25	0.52	0.22	0.91
(v / s)_i Volume / Saturation Flow Rate	0.27	0.30	0.19	0.05	0.19	0.17	0.65
s, saturation flow rate [veh/h]	1774	1597	3547	1583	3547	1863	1583
c, Capacity [veh/h]	701	631	879	392	1831	417	1443
d1, Uniform Delay [s]	22.60	23.48	31.42	26.87	13.03	32.51	0.50
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.37	8.14	1.39	0.26	0.12	2.60	2.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

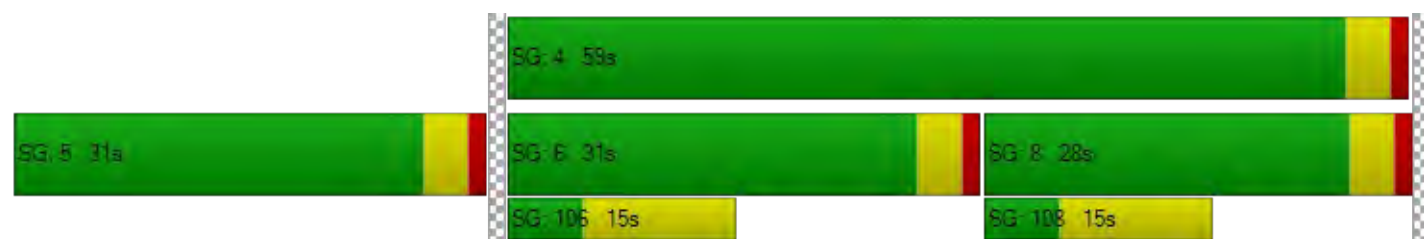
X, volume / capacity	0.68	0.75	0.76	0.21	0.37	0.74	0.71
d, Delay for Lane Group [s/veh]	27.96	31.61	32.81	27.12	13.16	35.11	3.46
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.09	9.71	6.74	1.39	3.90	6.42	1.19
50th-Percentile Queue Length [ft]	227.19	242.83	168.54	34.72	97.47	160.59	29.69
95th-Percentile Queue Length [veh]	14.03	14.82	11.00	2.50	7.02	10.58	2.14
95th-Percentile Queue Length [ft]	350.79	370.62	274.99	62.50	175.44	264.50	53.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.25	0.00	31.61	32.81	0.00	27.12	0.00	0.00	13.16	0.00	35.11	3.46
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	29.78			32.20			13.16			10.81		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.44											
Intersection LOS	C											
Intersection V/C	0.674											

Sequence


Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	41.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	537	44	144	51	79	42	306	997	80	107	646	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	537	44	144	51	79	42	306	997	80	107	646	776
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	11	36	13	20	11	77	249	20	27	162	194
Total Analysis Volume [veh/h]	537	44	144	51	79	42	306	997	80	107	646	776
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	47	0	9	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	46	46	7	43	43
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.51	0.51	0.08	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.09	0.03	0.04	0.03	0.45	0.28	0.05	0.06	0.35	0.49
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	674	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	111	116	99	369	1826	815	139	893	759
d1, Uniform Delay [s]	37.35	37.34	34.38	40.74	41.32	40.64	27.31	14.74	11.16	40.70	18.67	23.43
k, delay calibration	0.39	0.39	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	41.60	41.00	1.75	2.96	6.76	2.87	19.11	1.18	0.24	8.68	5.06	38.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.98	0.98	0.55	0.46	0.68	0.42	0.83	0.55	0.10	0.77	0.72	1.02
d, Delay for Lane Group [s/veh]	78.96	78.35	36.14	43.69	48.08	43.52	46.42	15.92	11.40	49.38	23.74	61.84
Lane Group LOS	E	E	D	D	D	D	D	B	B	D	C	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.63	9.64	2.97	1.17	1.91	0.97	4.24	6.71	0.83	2.63	11.29	22.90
50th-Percentile Queue Length [ft]	240.83	241.02	74.30	29.26	47.86	24.15	106.01	167.70	20.83	65.77	282.35	572.50
95th-Percentile Queue Length [veh]	14.72	14.73	5.35	2.11	3.45	1.74	7.62	10.96	1.50	4.74	16.81	31.28
95th-Percentile Queue Length [ft]	368.08	368.32	133.75	52.68	86.15	43.47	190.44	273.89	37.49	118.39	420.14	781.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	78.68	78.35	36.14	43.69	48.08	43.52	46.42	15.92	11.40	49.38	23.74	61.84
Movement LOS	E	E	D	D	D	D	D	B	B	D	C	F
d_A, Approach Delay [s/veh]	70.21			45.66			22.40			44.87		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	41.57											
Intersection LOS	D											
Intersection V/C	0.782											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-




Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.127

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	786	152	92	134	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	786	152	92	134	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	197	38	23	34	0	0
Total Analysis Volume [veh/h]	786	152	92	134	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.13	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.68	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.43	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	10.82	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.35		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	92.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1155	0	0	304	126	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1155	0	0	304	126	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	289	0	0	76	32	26
Total Analysis Volume [veh/h]	1155	0	0	304	126	102
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.83	0.22
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	92.93	15.06
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	5.48	0.84
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	136.90	21.01
d_A, Approach Delay [s/veh]	0.00		0.00		58.09	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	7.85					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	196.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	843	16	12	415	0	288	14	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	843	16	12	415	0	288	14	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	211	4	3	104	0	72	4	89	0	0	0
Total Analysis Volume [veh/h]	0	843	16	12	415	0	288	14	354	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.00	0.00	1.17	0.09	0.44	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.70	0.00	0.00	188.16	196.40	13.05	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.12	0.56	0.00	15.26	8.77	2.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	27.93	13.97	0.00	381.39	219.37	57.35	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.27			93.84			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	31.76											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	50.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	92	862	614	147	47	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	862	614	147	47	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	216	154	37	12	13
Total Analysis Volume [veh/h]	92	862	614	147	47	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.01	0.00	0.40	0.09
d_M, Delay for Movement [s/veh]	9.77	0.00	0.00	0.00	50.47	25.97
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh]	3.59	1.80	0.00	0.00	2.37	2.37
95th-Percentile Queue Length [ft]	89.76	44.88	0.00	0.00	59.28	59.28
d_A, Approach Delay [s/veh]	0.94		0.00		37.49	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.56					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

11.0
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	118	0	741	3	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	0	741	3	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	0	185	1	0	7
Total Analysis Volume [veh/h]	118	0	741	3	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.47	2.65	2.64	0.09
95th-Percentile Queue Length [ft]	11.87	66.25	66.11	2.16
Approach Delay [s/veh]	7.85	11.61		6.70
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.96			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.8
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	20	8	1	9	0	4	0	0	0	0
Total Analysis Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.24	0.20	
95th-Percentile Queue Length [ft]	6.58	5.95	4.92	
Approach Delay [s/veh]	7.81		7.55	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.79			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	83	0	2	34	0	15	10	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	2	34	0	15	10	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	1	9	0	4	3	20
Total Analysis Volume [veh/h]	83	0	2	34	0	15	10	78
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.49	0.12	0.31
95th-Percentile Queue Length [ft]	12.32	2.88	7.73
Approach Delay [s/veh]	8.00	7.65	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.79		
Intersection LOS	A		



Intersection Level Of Service Report

Intersection 29: US 101 SB On-ramp & Sunset

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 492.7
 Level Of Service: F
 Volume to Capacity (v/c): 1.539

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2287	662	62	2058
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2287	662	62	2058
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	572	166	16	515
Total Analysis Volume [veh/h]	0	0	2287	662	62	2058
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.54	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	492.65	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.37	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	159.18	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.41	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	6.03					
Intersection LOS	F					

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\FP2023AM.pdf

Scenario 7: FP 2023 AM
5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.535	45.8	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	0.746	41.1	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.097	8.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.826	54.8	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.133	167.6	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.090	37.0	E
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		14.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		14.3	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.597	79.2	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	45.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1628
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1628
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	0	73	119	0	15	0	0	247	0	35	407
Total Analysis Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1628
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.17	0.17	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.07	0.19	0.13	0.04	0.28	0.07	1.03
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	847	586	261	1335	311	1443
d1, Uniform Delay [s]	10.52	11.96	36.21	32.63	24.26	33.73	3.28
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	1.12	2.73	0.45	0.83	0.99	67.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.35	0.81	0.23	0.74	0.44	1.13
d, Delay for Lane Group [s/veh]	10.83	13.08	38.94	33.08	25.09	34.73	70.53
Lane Group LOS	B	B	D	C	C	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.32	3.41	5.14	1.17	8.86	2.76	26.95
50th-Percentile Queue Length [ft]	33.00	85.37	128.59	29.36	221.38	68.95	673.73
95th-Percentile Queue Length [veh]	2.38	6.15	8.86	2.11	13.74	4.96	39.46
95th-Percentile Queue Length [ft]	59.39	153.67	221.58	52.84	343.39	124.11	986.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.83	0.00	13.08	38.94	0.00	33.08	0.00	0.00	25.09	0.00	34.73	70.53
Movement LOS	B		B	D		C			C		C	F
d_A, Approach Delay [s/veh]	12.38			38.27			25.09			67.73		
Approach LOS	B			D			C			E		
d_I, Intersection Delay [s/veh]	45.81											
Intersection LOS	D											
Intersection V/C	0.535											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	41.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	312	23	38	76	125	70	265	481	116	146	947	733
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	23	38	76	125	70	265	481	116	146	947	733
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	6	10	19	31	18	66	120	29	37	237	183
Total Analysis Volume [veh/h]	312	23	38	76	125	70	265	481	116	146	947	733
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	21	0	35	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	8	8	8	59	46	46	9	45	45
g / C, Green / Cycle	0.12	0.12	0.12	0.09	0.09	0.09	0.66	0.51	0.51	0.10	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.02	0.04	0.07	0.04	0.44	0.14	0.07	0.08	0.46	0.51
s, saturation flow rate [veh/h]	1774	1786	1583	1774	1863	1583	604	3547	1583	1774	1863	1610
c, Capacity [veh/h]	211	213	189	163	171	145	370	1798	803	186	924	799
d1, Uniform Delay [s]	38.62	38.62	35.85	38.87	39.88	38.92	25.80	12.68	11.83	39.37	21.18	22.73
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.48	6.43	0.52	2.08	5.92	2.47	11.33	0.37	0.38	7.12	16.29	40.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

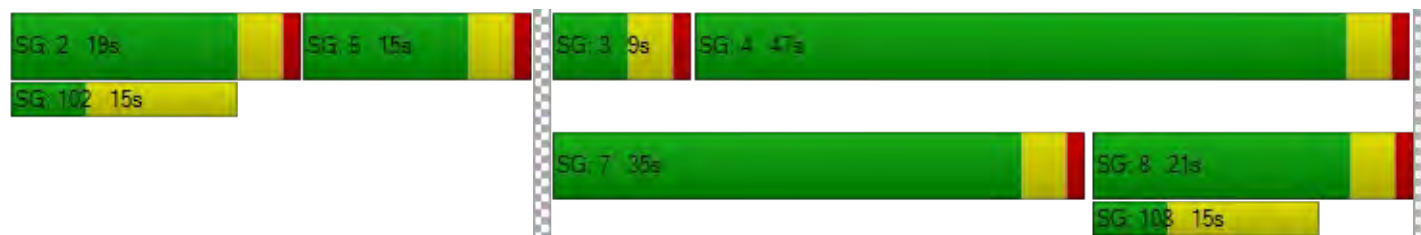
X, volume / capacity	0.79	0.79	0.20	0.47	0.73	0.48	0.72	0.27	0.14	0.79	0.93	1.03
d, Delay for Lane Group [s/veh]	45.10	45.05	36.37	40.94	45.80	41.39	37.13	13.05	12.21	46.49	37.47	63.41
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.91	3.94	0.77	1.67	2.94	1.55	2.94	2.71	1.26	3.48	19.58	24.46
50th-Percentile Queue Length [ft]	97.87	98.41	19.34	41.76	73.53	38.84	73.51	67.83	31.60	86.88	489.44	611.46
95th-Percentile Queue Length [veh]	7.05	7.09	1.39	3.01	5.29	2.80	5.29	4.88	2.27	6.26	26.83	33.41
95th-Percentile Queue Length [ft]	176.16	177.13	34.82	75.16	132.35	69.91	132.31	122.09	56.87	156.38	670.85	835.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.08	45.05	36.37	40.94	45.80	41.39	37.13	13.05	12.21	46.49	39.99	63.41
Movement LOS	D	D	D	D	D	D	D	B	B	D	D	E
d_A, Approach Delay [s/veh]	44.19			43.30			20.34			49.91		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	41.08											
Intersection LOS	D											
Intersection V/C	0.746											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.097

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	398	96	103	220	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	398	96	103	220	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	24	26	55	0	0
Total Analysis Volume [veh/h]	398	96	103	220	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.74	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.32	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	8.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.79		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	54.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.826

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	613	0	0	455	251	105
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	613	0	0	455	251	105
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	0	0	114	63	26
Total Analysis Volume [veh/h]	613	0	0	455	251	105
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.83	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	54.81	11.16
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.95	0.54
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	173.75	13.38
d_A, Approach Delay [s/veh]	0.00		0.00		41.93	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	10.48					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	167.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	400	31	25	677	0	227	25	641	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	400	31	25	677	0	227	25	641	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	100	8	6	169	0	57	6	160	0	0	0
Total Analysis Volume [veh/h]	0	400	31	25	677	0	227	25	641	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	1.05	0.13	0.98	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.27	0.00	0.00	165.04	167.63	54.22	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.34	0.67	0.00	12.42	13.47	14.52	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	33.55	16.77	0.00	310.42	336.67	362.91	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.29			85.57			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	37.82											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	37.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	31	414	1004	244	11	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	414	1004	244	11	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	104	251	61	3	7
Total Analysis Volume [veh/h]	31	414	1004	244	11	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.00	0.09	0.06
d_M, Delay for Movement [s/veh]	11.89	0.00	0.00	0.00	36.97	16.00
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh]	1.93	0.96	0.00	0.00	0.53	0.53
95th-Percentile Queue Length [ft]	48.17	24.09	0.00	0.00	13.26	13.26
d_A, Approach Delay [s/veh]	0.83		0.00		22.07	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	E					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

14.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	37	0	958	44	0	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	0	958	44	0	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	240	11	0	6
Total Analysis Volume [veh/h]	37	0	958	44	0	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.13	4.71	4.58	0.07
95th-Percentile Queue Length [ft]	3.36	117.81	114.40	1.75
Approach Delay [s/veh]	7.37	14.91		6.50
Approach LOS	A	B		A
Intersection Delay [s/veh]	14.46			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 14.3
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	86	9	3	101	0	2	0	0	0	0
Total Analysis Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.40	1.34	4.55	
95th-Percentile Queue Length [ft]	34.89	33.59	113.64	
Approach Delay [s/veh]	11.30		17.38	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	14.32			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	184	0	5	74	0	64	23	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	0	5	74	0	64	23	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	0	1	19	0	16	6	70
Total Analysis Volume [veh/h]	184	0	5	74	0	64	23	281
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.16	0.66	2.84
95th-Percentile Queue Length [ft]	54.12	16.57	70.95
Approach Delay [s/veh]	13.30	14.77	
Approach LOS	B	B	
Intersection Delay [s/veh]	14.32		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	79.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1657	474	64	2505
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1657	474	64	2505
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	414	119	16	626
Total Analysis Volume [veh/h]	0	0	1657	474	64	2505
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.60	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	79.18	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.89	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	72.32	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.97	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.08					
Intersection LOS	F					

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\FP2023PM.pdf

Scenario 8: FP 2023 PM
5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.491	20.5	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	0.785	42.5	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.128	10.7	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.874	102.0	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.091	207.8	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.406	52.1	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		11.0	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.8	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.570	508.6	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	0	109	169	0	20	0	0	170	0	77	260
Total Analysis Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35	22	22	47	20	82
g / C, Green / Cycle	0.39	0.39	0.25	0.25	0.52	0.22	0.91
(v / s)_i Volume / Saturation Flow Rate	0.27	0.30	0.19	0.05	0.19	0.17	0.66
s, saturation flow rate [veh/h]	1774	1597	3547	1583	3547	1863	1583
c, Capacity [veh/h]	696	627	885	395	1840	419	1443
d1, Uniform Delay [s]	22.79	23.68	31.32	26.74	12.91	32.45	0.52
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.51	8.38	1.39	0.25	0.12	2.56	3.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

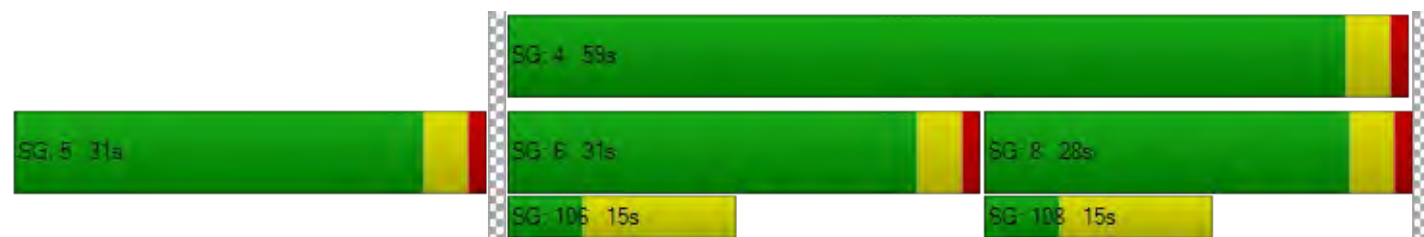
X, volume / capacity	0.69	0.76	0.76	0.21	0.37	0.74	0.72
d, Delay for Lane Group [s/veh]	28.30	32.06	32.71	26.99	13.03	35.01	3.67
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.15	9.79	6.78	1.38	3.89	6.41	1.26
50th-Percentile Queue Length [ft]	228.77	244.77	169.59	34.62	97.31	160.31	31.60
95th-Percentile Queue Length [veh]	14.11	14.92	11.05	2.49	7.01	10.57	2.27
95th-Percentile Queue Length [ft]	352.79	373.06	276.37	62.31	175.16	264.14	56.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.59	0.00	32.06	32.71	0.00	26.99	0.00	0.00	13.03	0.00	35.01	3.67
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	30.17			32.09			13.03			10.84		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.46											
Intersection LOS	C											
Intersection V/C	0.491											

Sequence





Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	548	44	144	51	79	42	306	997	85	107	646	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	548	44	144	51	79	42	306	997	85	107	646	776
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	11	36	13	20	11	77	249	21	27	162	194
Total Analysis Volume [veh/h]	548	44	144	51	79	42	306	997	85	107	646	776
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	47	0	9	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	46	46	7	43	43
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.51	0.51	0.08	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.17	0.17	0.09	0.03	0.04	0.03	0.45	0.28	0.05	0.06	0.35	0.49
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	674	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	111	116	99	369	1826	815	139	893	759
d1, Uniform Delay [s]	37.49	37.48	34.38	40.74	41.32	40.64	27.31	14.74	11.20	40.70	18.67	23.43
k, delay calibration	0.41	0.41	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	46.77	46.09	1.75	2.96	6.76	2.87	19.11	1.18	0.26	8.68	5.06	38.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	1.00	0.55	0.46	0.68	0.42	0.83	0.55	0.10	0.77	0.72	1.02
d, Delay for Lane Group [s/veh]	84.26	83.57	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Lane Group LOS	F	F	D	D	D	D	D	B	B	D	C	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	10.20	10.20	2.97	1.17	1.91	0.97	4.24	6.71	0.89	2.63	11.29	22.90
50th-Percentile Queue Length [ft]	254.99	255.05	74.30	29.26	47.86	24.15	106.01	167.70	22.21	65.77	282.35	572.50
95th-Percentile Queue Length [veh]	15.44	15.44	5.35	2.11	3.45	1.74	7.62	10.96	1.60	4.74	16.81	31.28
95th-Percentile Queue Length [ft]	385.93	386.01	133.75	52.68	86.15	43.47	190.44	273.89	39.98	118.39	420.14	781.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	83.94	83.57	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Movement LOS	F	F	D	D	D	D	D	B	B	D	C	F
d_A, Approach Delay [s/veh]	74.57			45.66			22.37			44.87		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	42.45											
Intersection LOS	D											
Intersection V/C	0.785											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	796	152	92	139	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	796	152	92	139	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	199	38	23	35	0	0
Total Analysis Volume [veh/h]	796	152	92	139	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.13	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.73	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.44	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	10.93	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.27		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	102.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1158	0	0	310	131	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1158	0	0	310	131	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	290	0	0	78	33	26
Total Analysis Volume [veh/h]	1158	0	0	310	131	102
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.87	0.22
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	101.96	15.09
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	5.93	0.84
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	148.22	21.07
d_A, Approach Delay [s/veh]	0.00		0.00		63.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	8.76					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	207.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.091

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	212	4	3	107	0	72	4	89	0	0	0
Total Analysis Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.00	0.00	1.20	0.09	0.45	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.71	0.00	0.00	199.46	207.84	13.16	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.16	0.58	0.00	15.68	9.00	2.33	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	29.01	14.51	0.00	391.94	225.04	58.13	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.27			99.11			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	33.30											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	52.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.406

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	92	865	626	147	47	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	865	626	147	47	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	216	157	37	12	13
Total Analysis Volume [veh/h]	92	865	626	147	47	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.01	0.00	0.41	0.09
d_M, Delay for Movement [s/veh]	9.82	0.00	0.00	0.00	52.14	26.94
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh]	3.69	1.84	0.00	0.00	2.45	2.45
95th-Percentile Queue Length [ft]	92.23	46.12	0.00	0.00	61.14	61.14
d_A, Approach Delay [s/veh]	0.94		0.00		38.79	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.61					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

11.0
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	118	0	741	3	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	0	741	3	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	0	185	1	0	7
Total Analysis Volume [veh/h]	118	0	741	3	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.47	2.65	2.64	0.09
95th-Percentile Queue Length [ft]	11.87	66.25	66.11	2.16
Approach Delay [s/veh]	7.85	11.61		6.70
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.96			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.8
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	20	8	1	9	0	4	0	0	0	0
Total Analysis Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.24	0.20	
95th-Percentile Queue Length [ft]	6.58	5.95	4.92	
Approach Delay [s/veh]	7.81		7.55	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.79			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	83	0	2	34	0	15	10	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	2	34	0	15	10	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	1	9	0	4	3	20
Total Analysis Volume [veh/h]	83	0	2	34	0	15	10	78
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.49	0.12	0.31
95th-Percentile Queue Length [ft]	12.32	2.88	7.73
Approach Delay [s/veh]	8.00	7.65	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.79		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	508.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.570

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2290	675	62	2080
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2290	675	62	2080
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	573	169	16	520
Total Analysis Volume [veh/h]	0	0	2290	675	62	2080
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.57	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	508.64	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.43	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	160.73	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.72	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	6.18					
Intersection LOS	F					

Appendix E

Signal Warrant Analysis

LADOT

Traffic Signal Warrants Worksheet

DATE11/30/17PREPARERGTCREVIEWER

MAJOR ST:Gower Street

MINOR ST:US 101 NB Off-Ramp

Critical Approach Speed

MPH

or

Speed Limit

MPH35

Speed limit or critical speed on major street traffic > 40 mph

In built up area of isolated community of < 10,000 population

☐

or

☐

RURAL (R)

☒ URBAN (U)

Eight-Hour Vehicular Volume

WARRANT1

N/A☒

SATISFIED YES☐

NO☐

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

- a. Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.

b. A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.

c. In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.

d. 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.

e. Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.

f. 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. This 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. 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.

g. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1 ✓		2 or More ✓		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 ✓ (480) ✓	420 (336)	1310								
Highest Approach Minor Street	150 ✓ (120) ✓	105 (84)	200 (160)	140 (112)	49								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1310								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	49								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND		<input type="checkbox"/>	<input type="checkbox"/>
	B. INTERRUPTION OF CONTINUOUS TRAFFIC			
	AND			
AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/> <u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... <u> </u> <u> </u> <div style="text-align: center;">A B</div>				2 CONDITIONS 80%		2 CONDITIONS 80%	

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

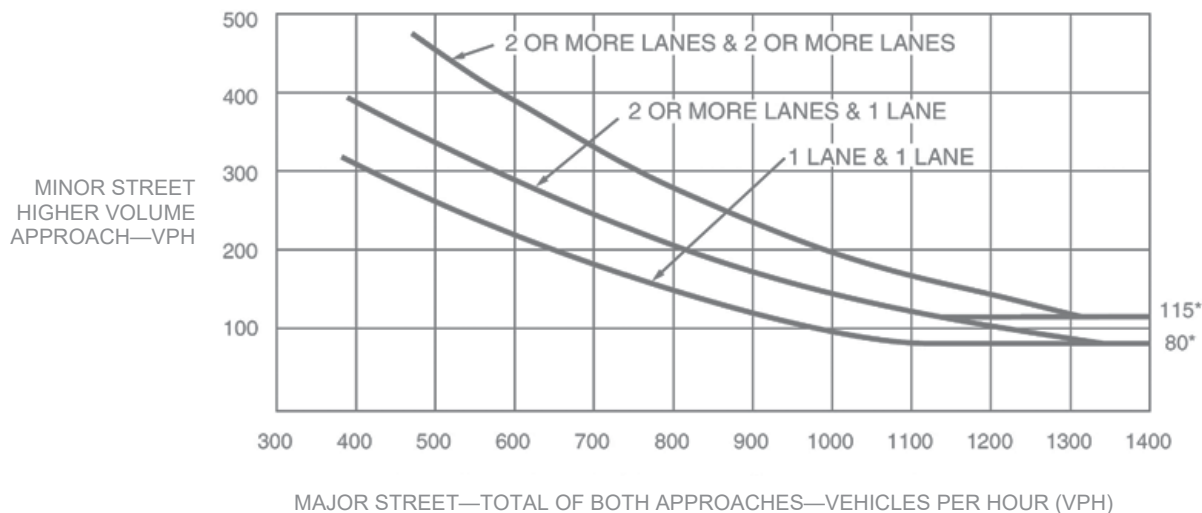
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	1310				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street		✓	49					_____ %	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

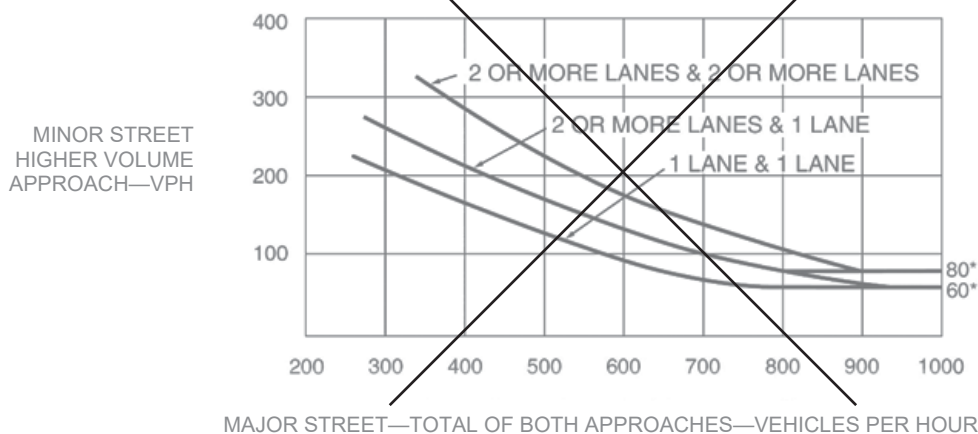
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO

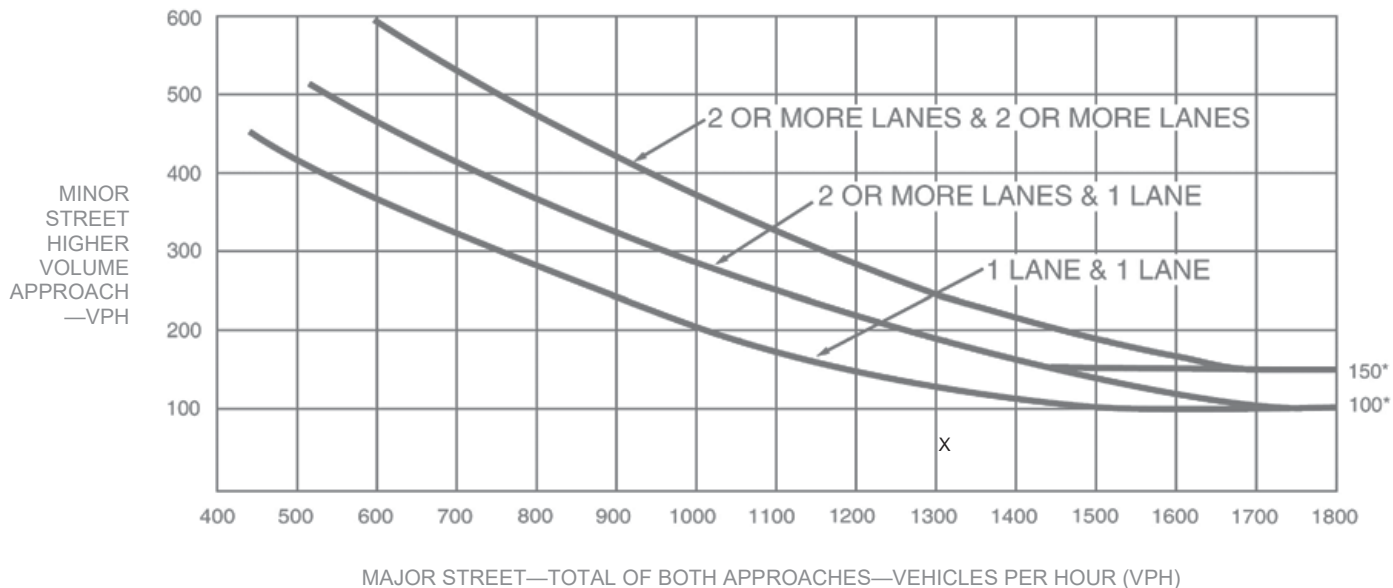
APPROACH LANES	One	2 or More	Hour	
Both Approaches - Major Street		✓	5:00 1310	
Higher Approach - Minor Street		✓	49	

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Peak Hour (continued)

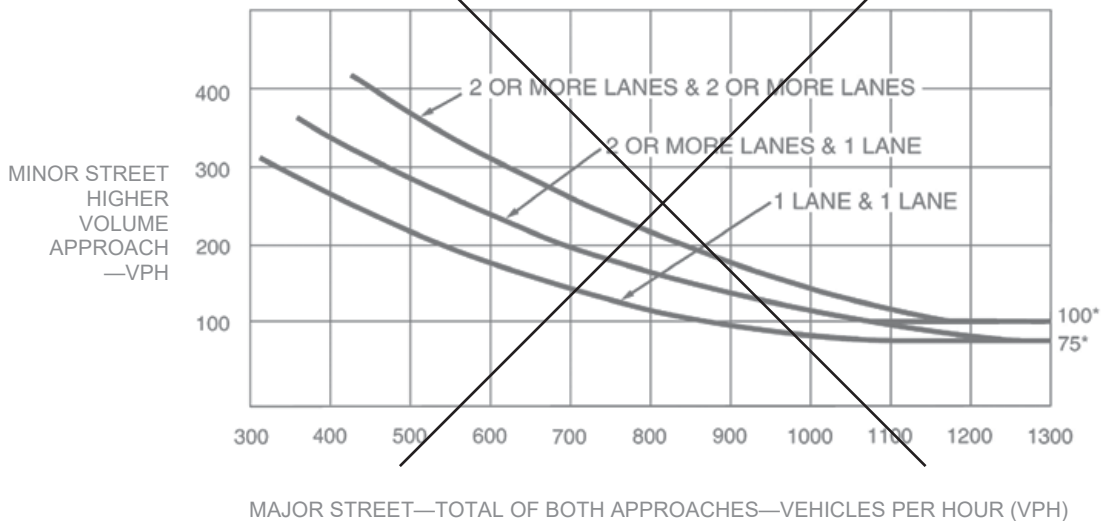
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

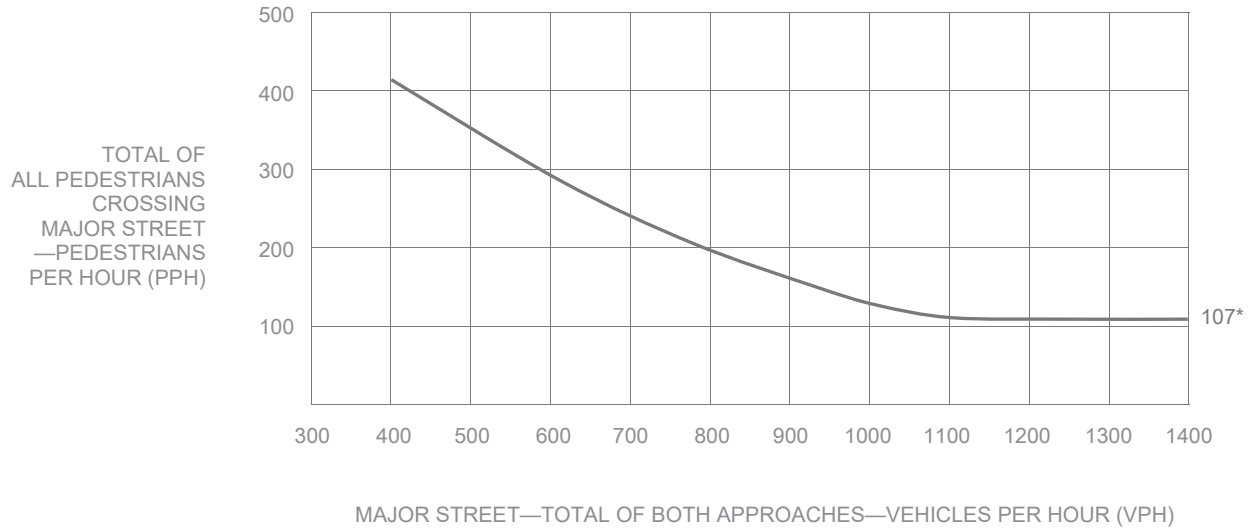
YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH

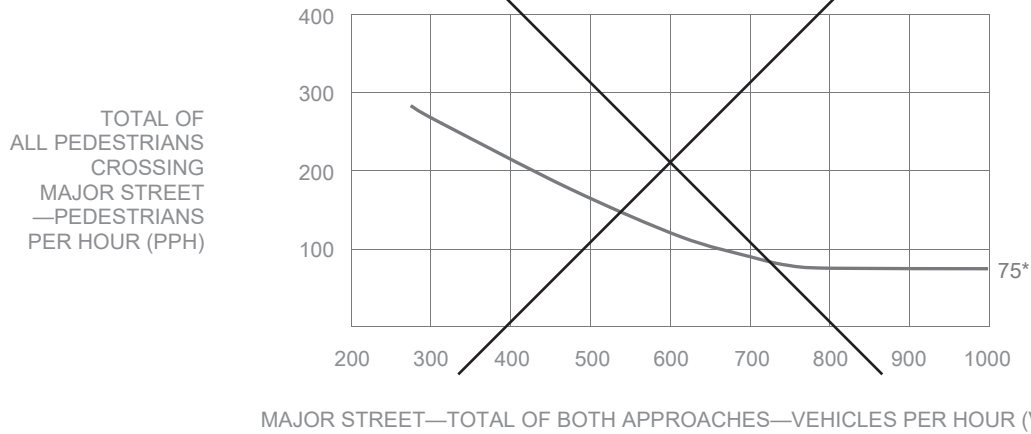
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH

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

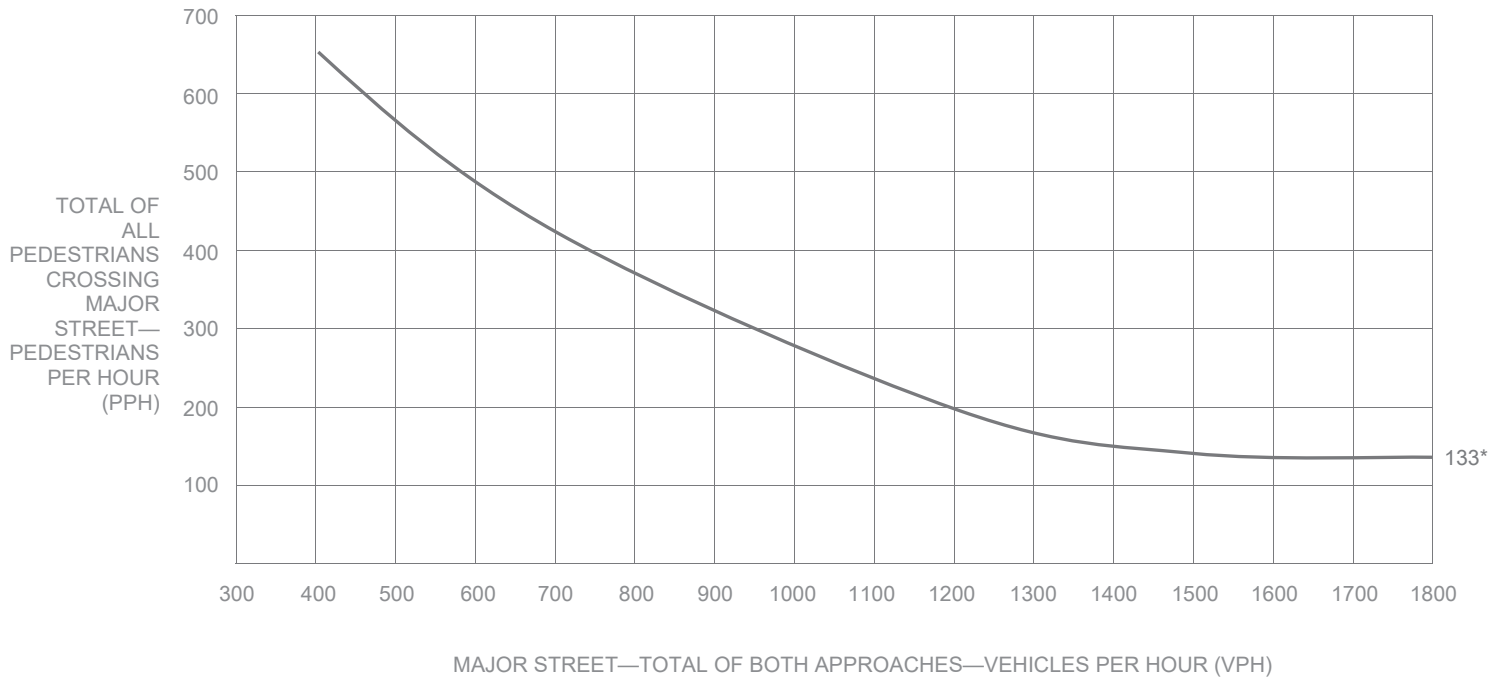


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

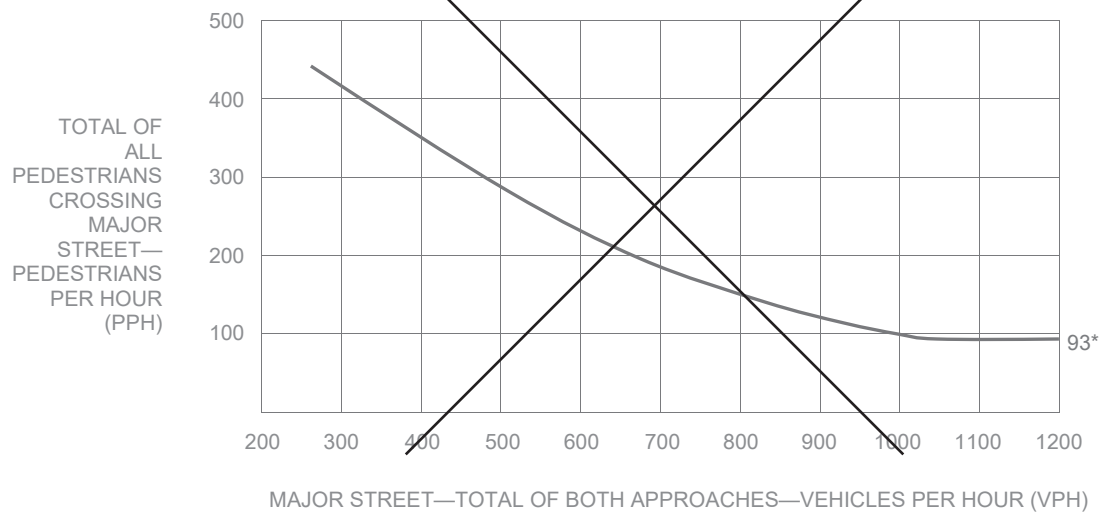
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A
☒

SATISFIED

YES ☐
NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex;"> <div style="flex: 1;">Minutes Children Using Crossing</div> <div style="flex: 1; border: 1px solid black; text-align: center;">Hour</div> </div> </td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">Number of Adequate Gaps</td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="flex: 1; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex;"> <div style="flex: 1;">Minutes Children Using Crossing</div> <div style="flex: 1; border: 1px solid black; text-align: center;">Hour</div> </div>		Number of Adequate Gaps	School Age Pedestrians Crossing Street / hr		YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex;"> <div style="flex: 1;">Minutes Children Using Crossing</div> <div style="flex: 1; border: 1px solid black; text-align: center;">Hour</div> </div>												
	Number of Adequate Gaps												
School Age Pedestrians Crossing Street / hr													
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic	<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A
☒

SATISFIED

YES ☐
NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

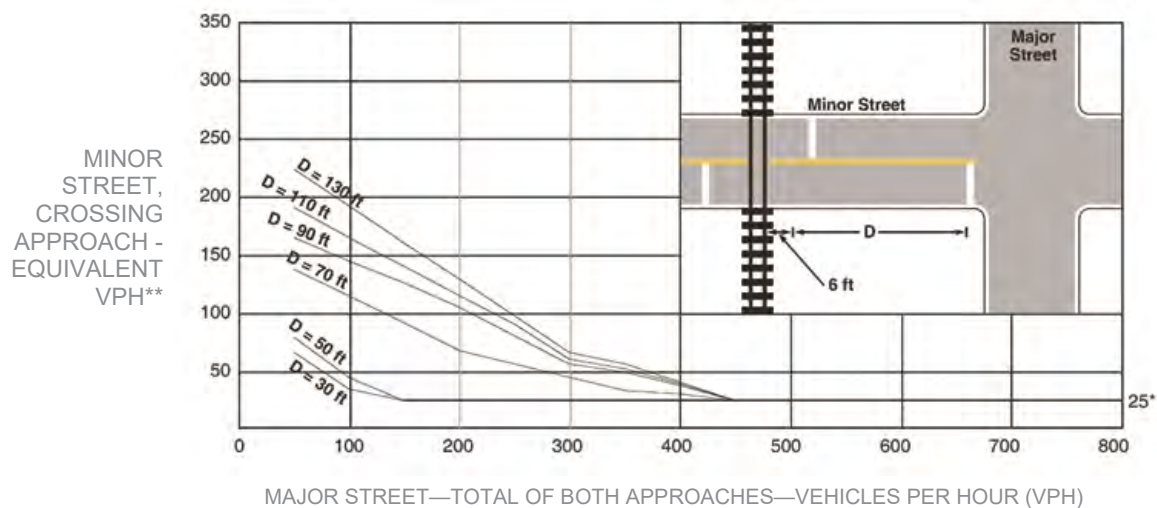
Intersection Near a Grade Crossing *(continued)*

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

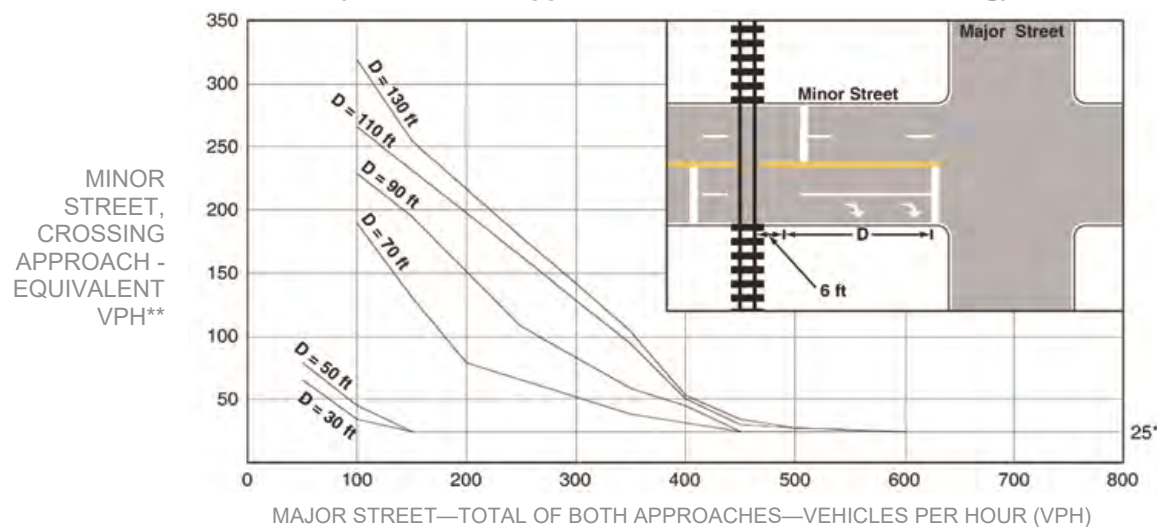
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
AND				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
OR GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.



PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: US 101 NB Off-Ramp

Critical Approach Speed }  or Speed Limit } 

Speed limit or critical speed on major street traffic > 40 mph..... ☐ or ☐ } RURAL (R) ☒ URBAN (U)

In built up area of isolated community of < 10,000 population..... ☐

Eight-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- b. A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- c. In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- d. 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.
- e. Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- f. 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. This 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. 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.
- g. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A
Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1319								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	54								

Condition B
Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1319								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	54								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/> No one condition satisfied, but following conditions fulfilled 80% or more..... <u> </u> <u> </u> <div style="text-align: center;">A B</div>				2 CONDITIONS 80%		2 CONDITIONS 80%	

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

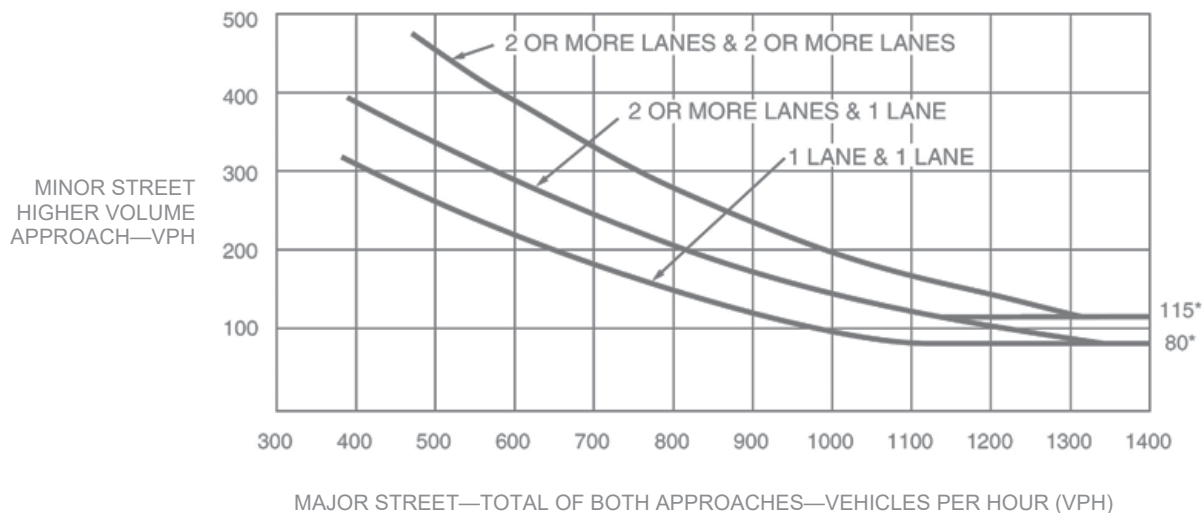
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	1319				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street		✓	54					_____ %	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

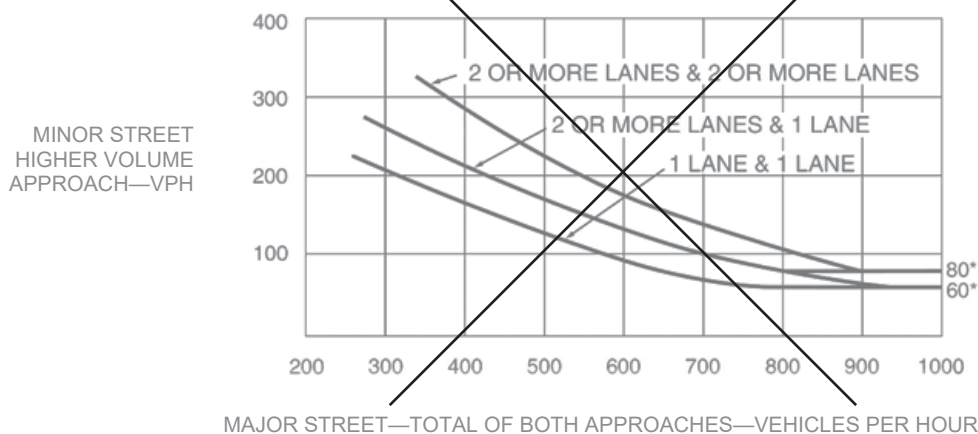
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT

3

N/A ☐

SATISFIED

YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>

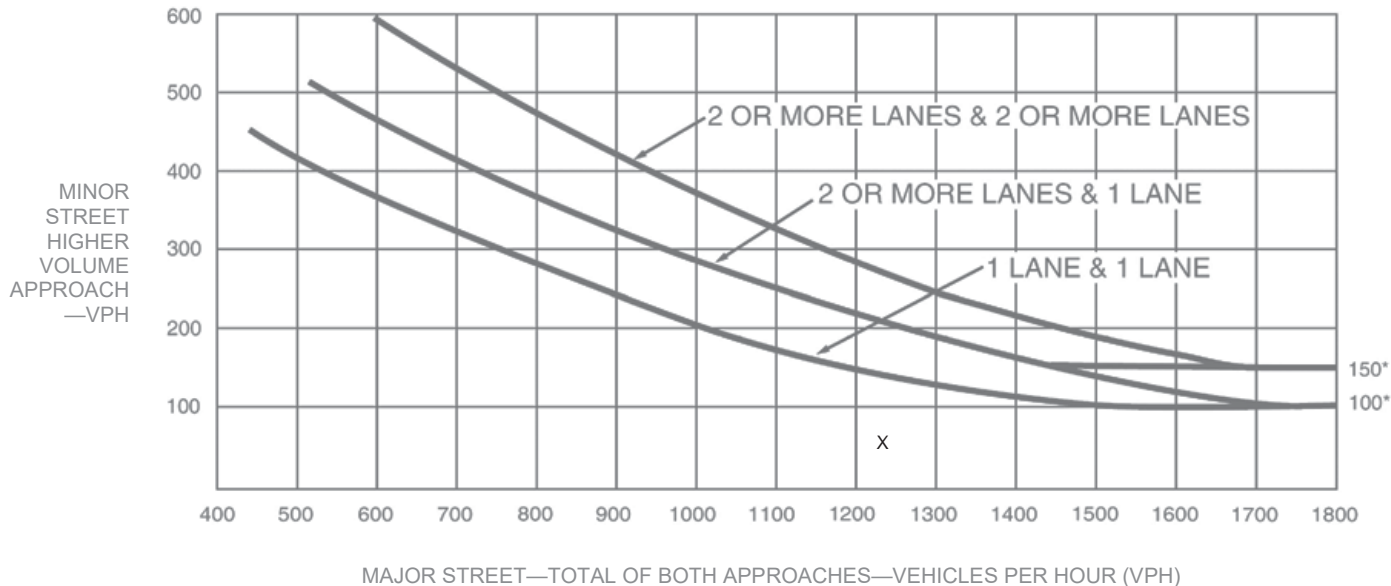
APPROACH LANES	One	2 or More	Hour	
Both Approaches - Major Street		✓	5:00	1319
Higher Approach - Minor Street		✓		54

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Peak Hour (continued)

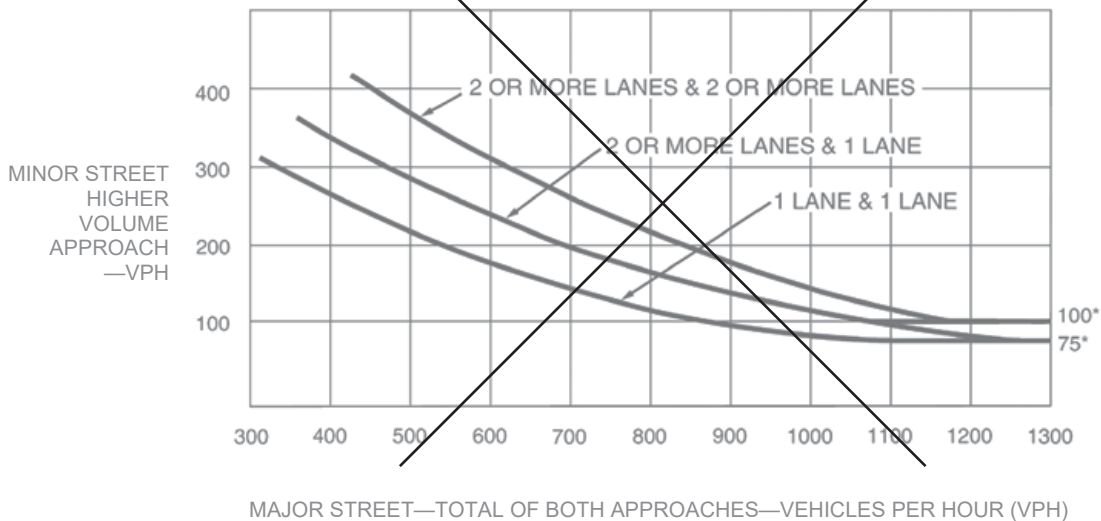
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

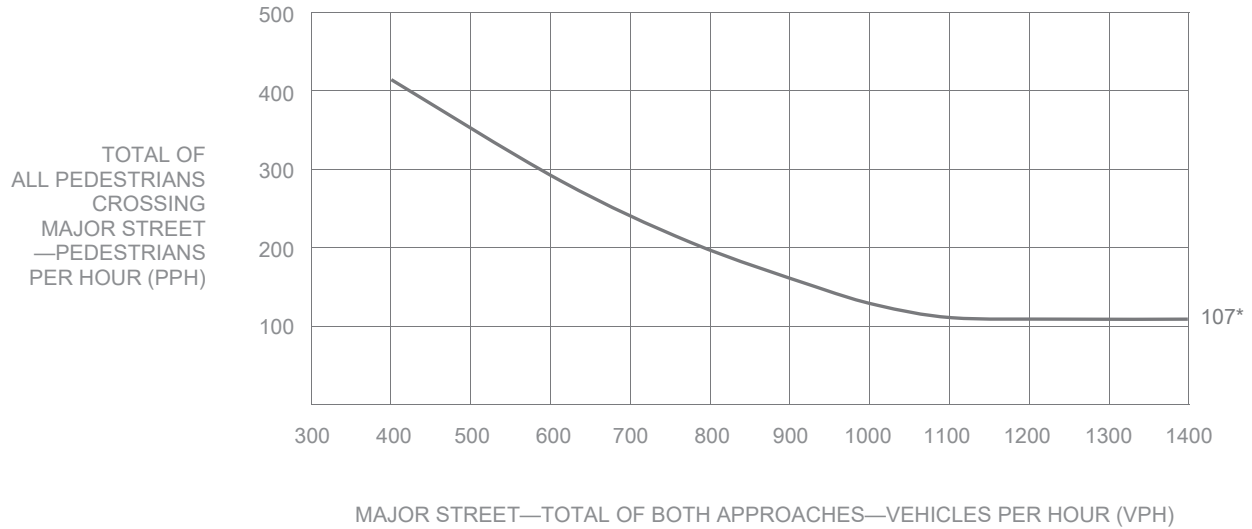
YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH

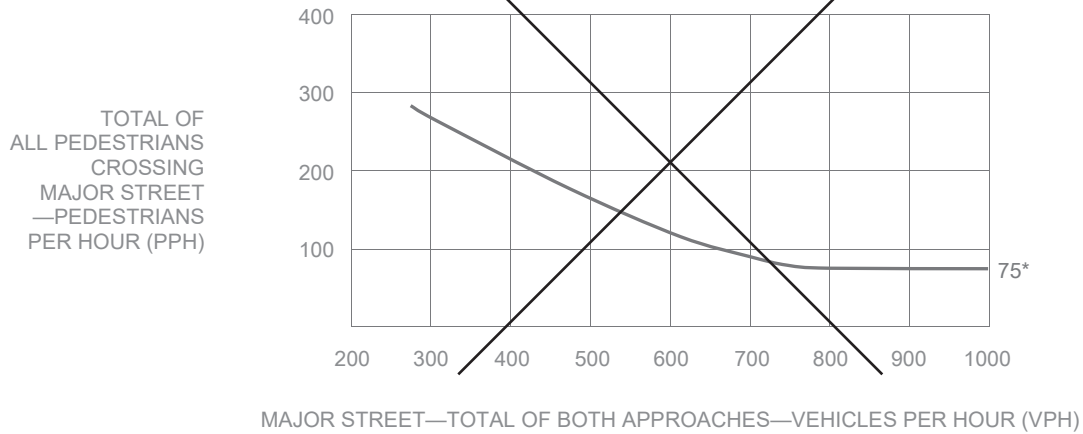
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH

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

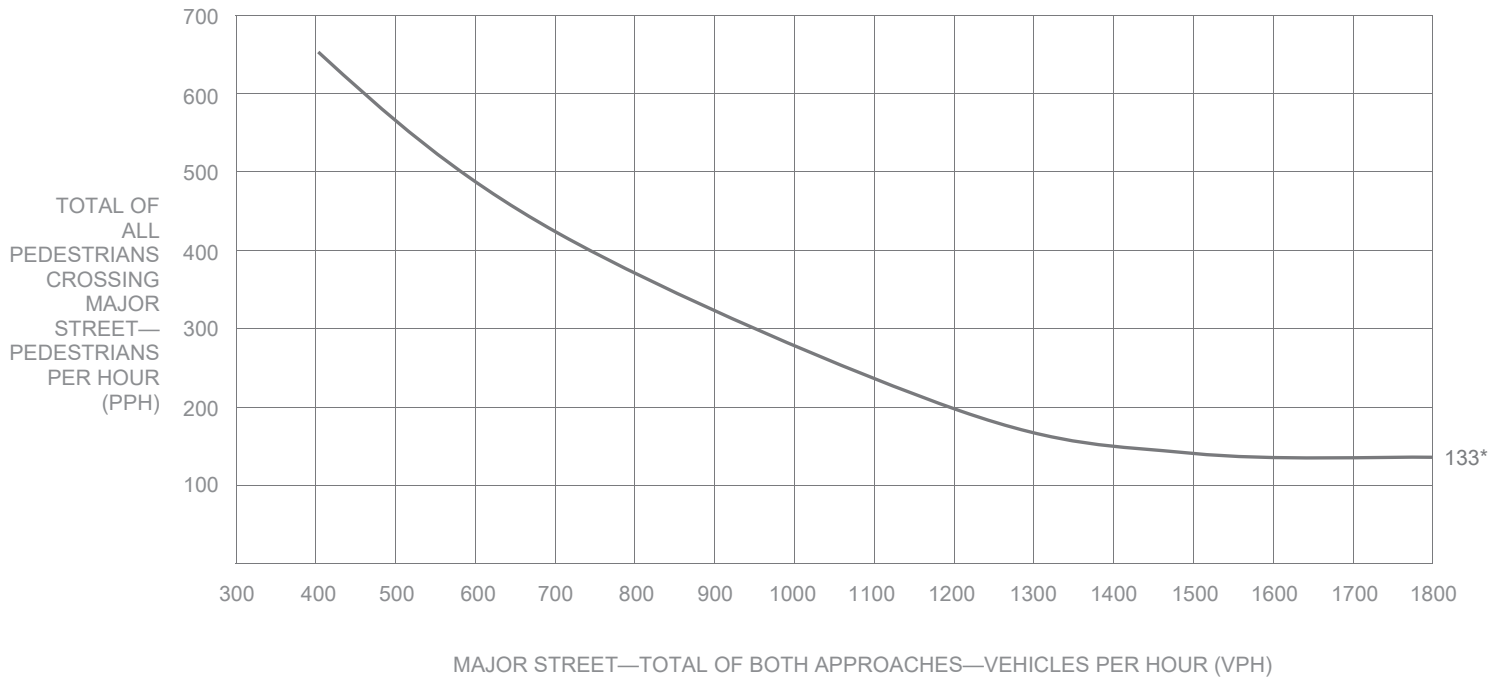


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

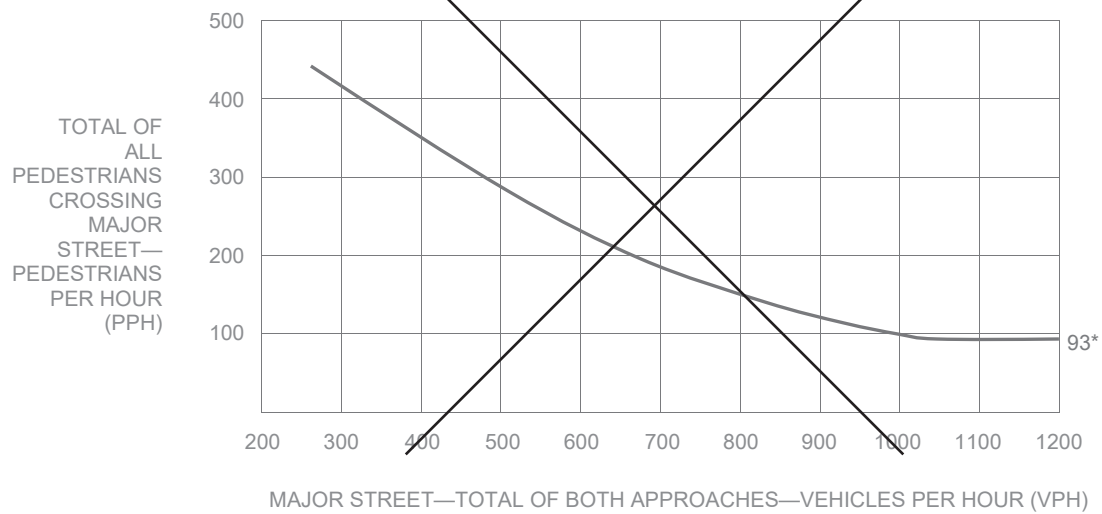
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO										
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px;"></div> </td> <td style="width: 20%; padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">Number of Adequate Gaps</td> <td style="padding: 5px;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px;"></div>			Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px;"></div>															
	Number of Adequate Gaps															
School Age Pedestrians Crossing Street / hr																
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>											

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic	<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

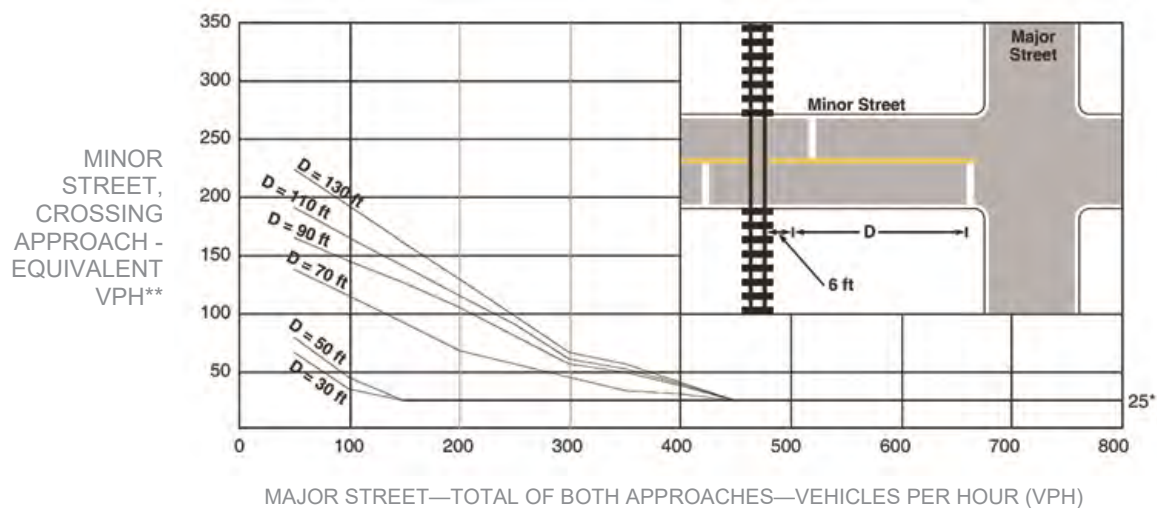
Intersection Near a Grade Crossing *(continued)*

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

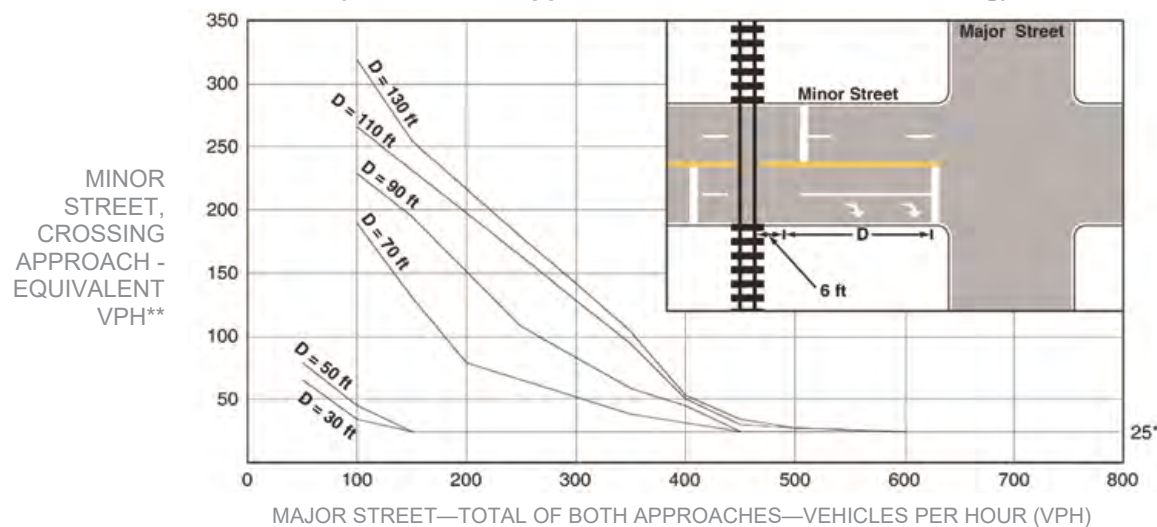
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street
MINOR ST: US 101 NB Off-Ramp

Critical Approach Speed

MPH

or

Speed Limit

MPH 35

☐ or ☐

RURAL (R)

☒ URBAN (U)

Speed limit or critical speed on major street traffic > 40 mph.....

In built up area of isolated community of < 10,000 population.....

Eight-Hour Vehicular Volume

WARRANT 1

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- b. A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- c. In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- d. 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.
- e. Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- f. 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. This 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. 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.
- g. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

(rev. July 2014)

Eight-Hour Vehicular Volume (continued)

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1459								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	126								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1459								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	126								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	2 or More.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	1.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	2 or More.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	1.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

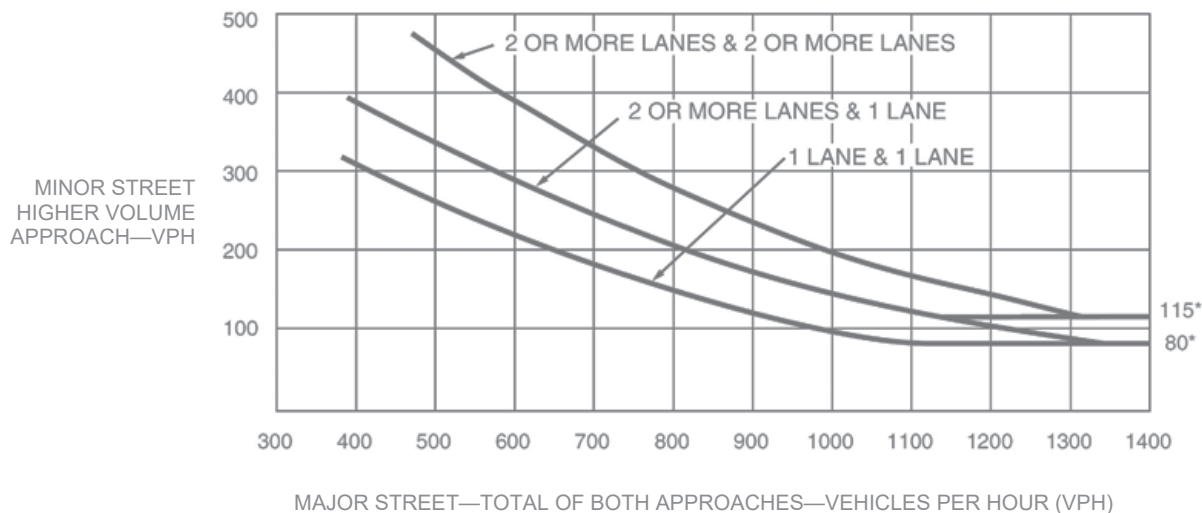
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	1459				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street		✓	126					<input type="checkbox"/>	<input type="checkbox"/>
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

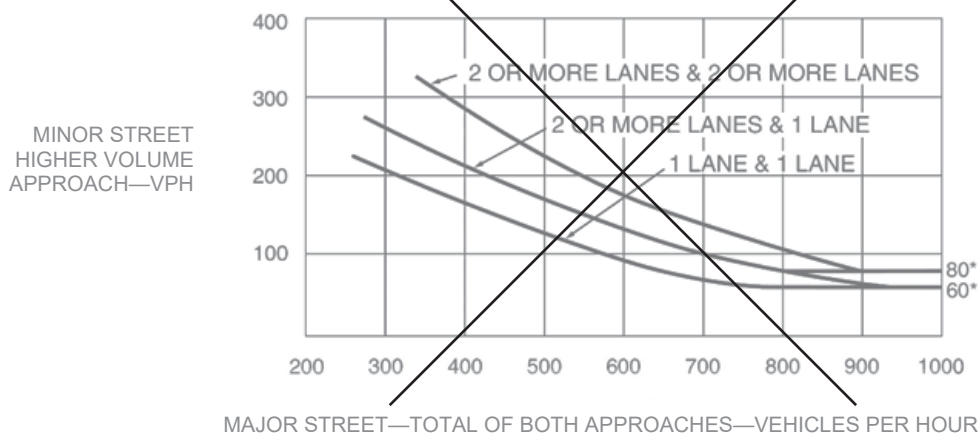
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	YES	NO	N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

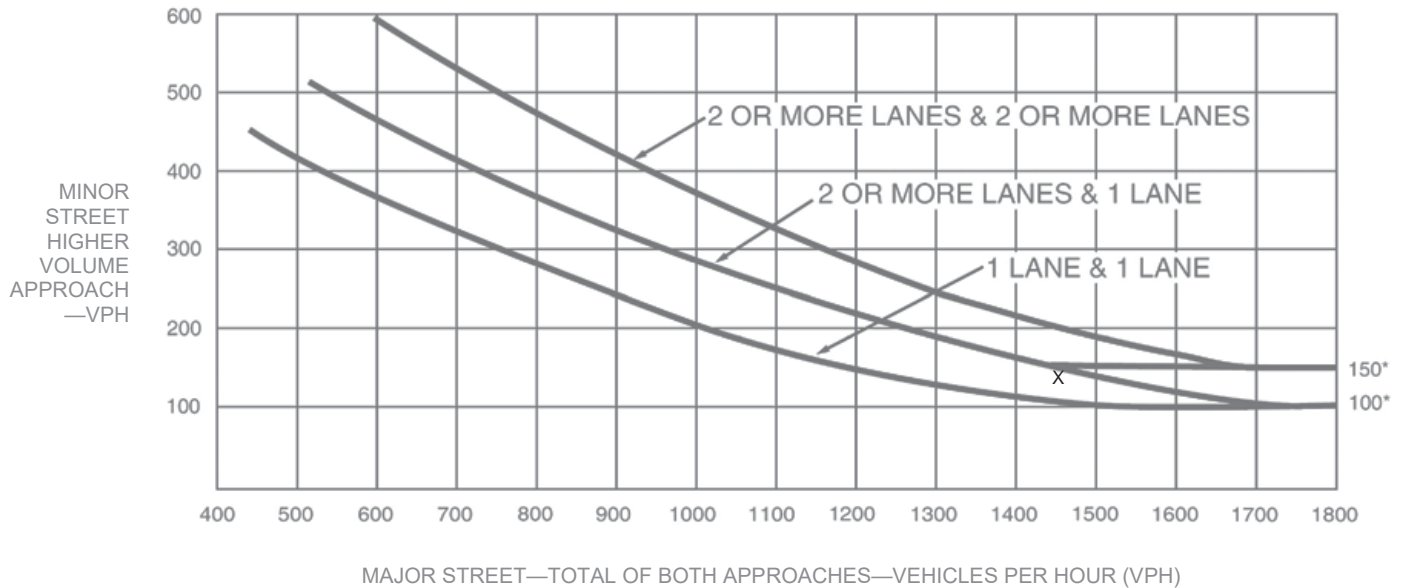
			Hour
APPROACH LANES	One	2 or More	5:00
Both Approaches - Major Street		✓	1459
Higher Approach - Minor Street		✓	126

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)		

Peak Hour (continued)

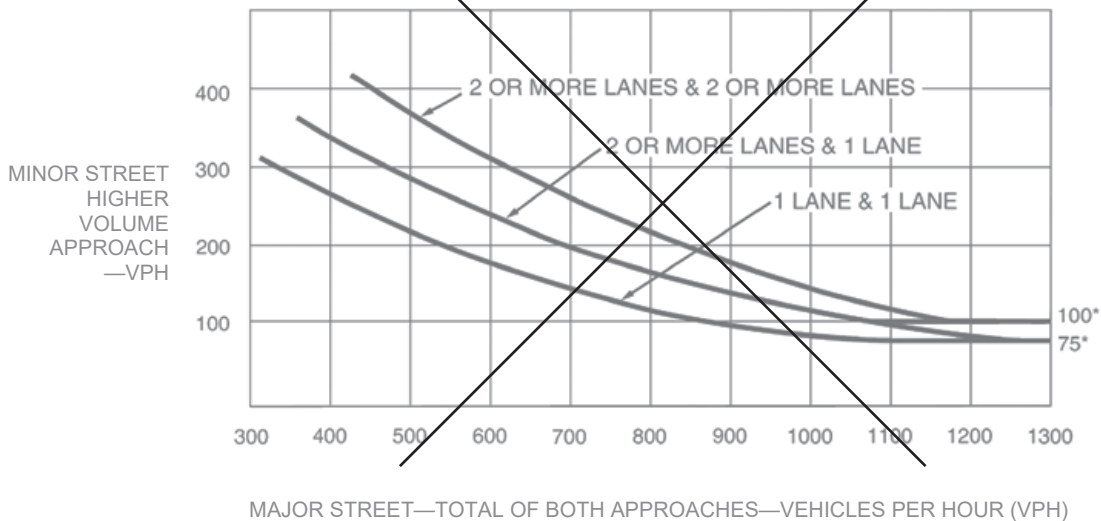
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED YES NO
☐ ☐

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

PART 2

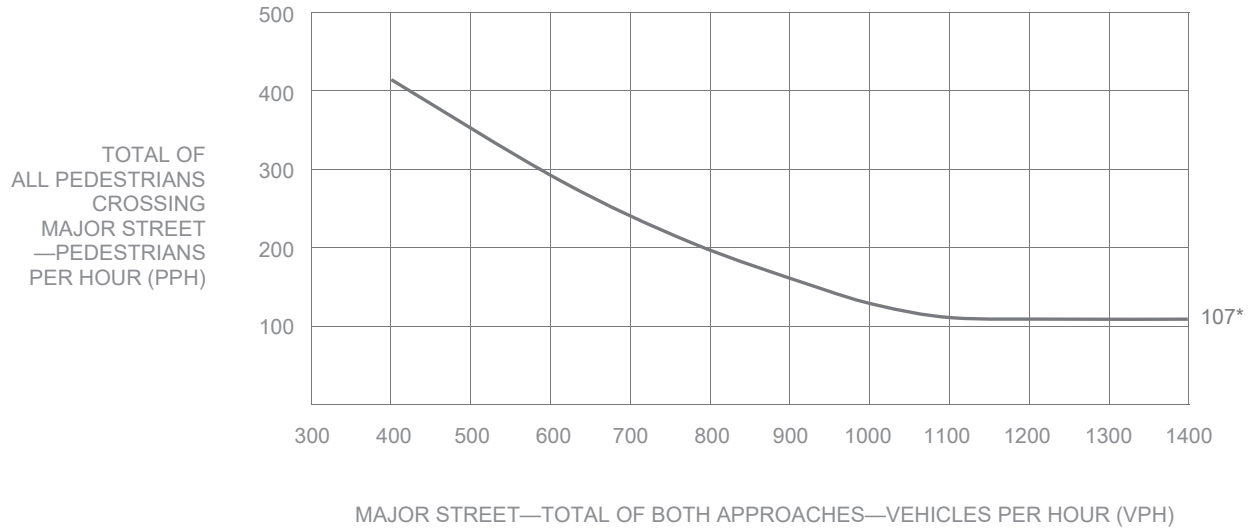
SATISFIED YES NO
☐ ☐

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

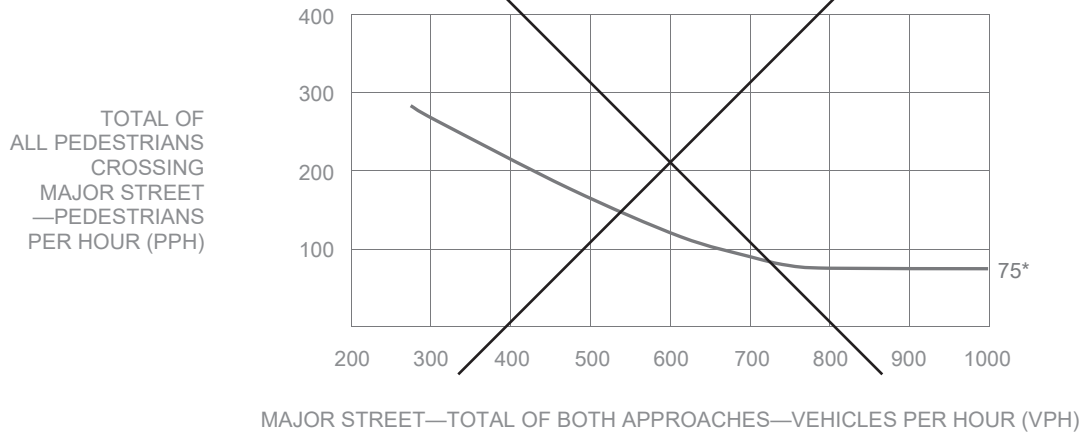
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

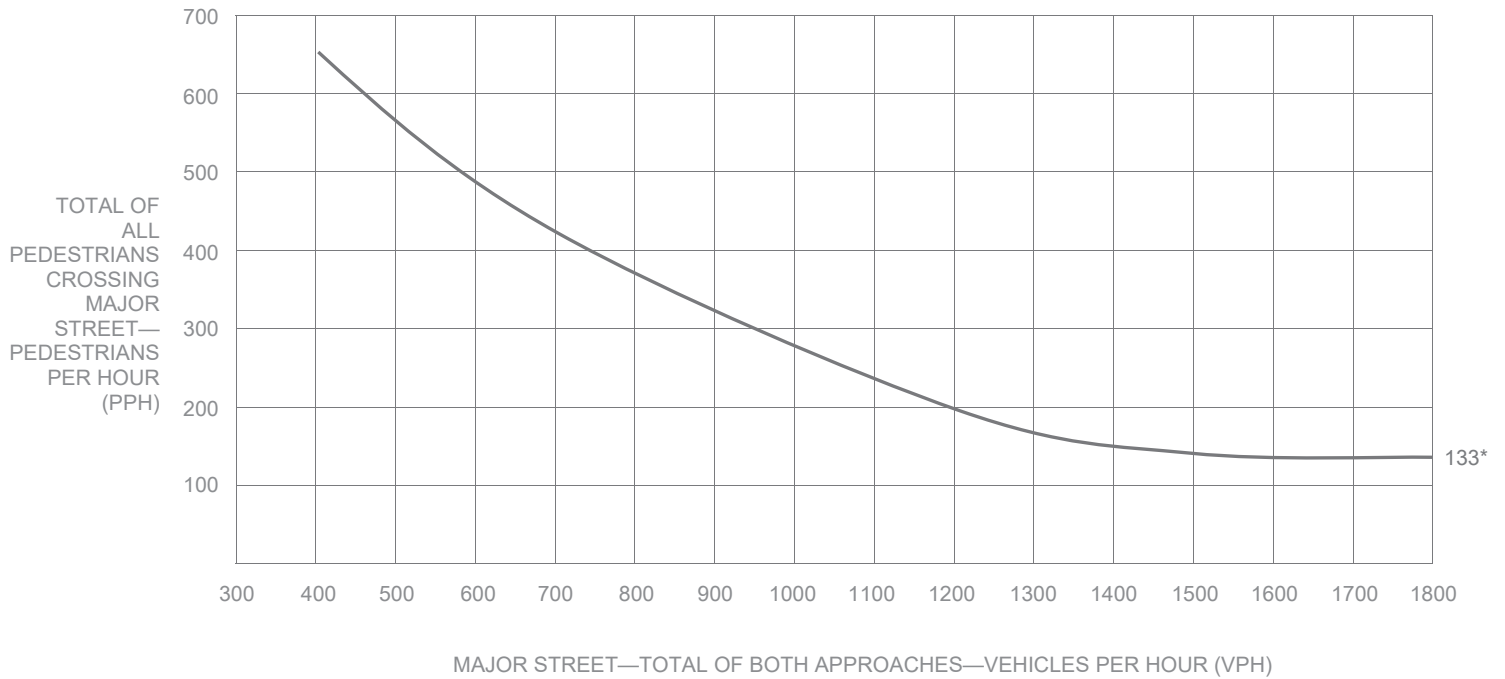


* Note: 75 pph applies as the lower threshold volume

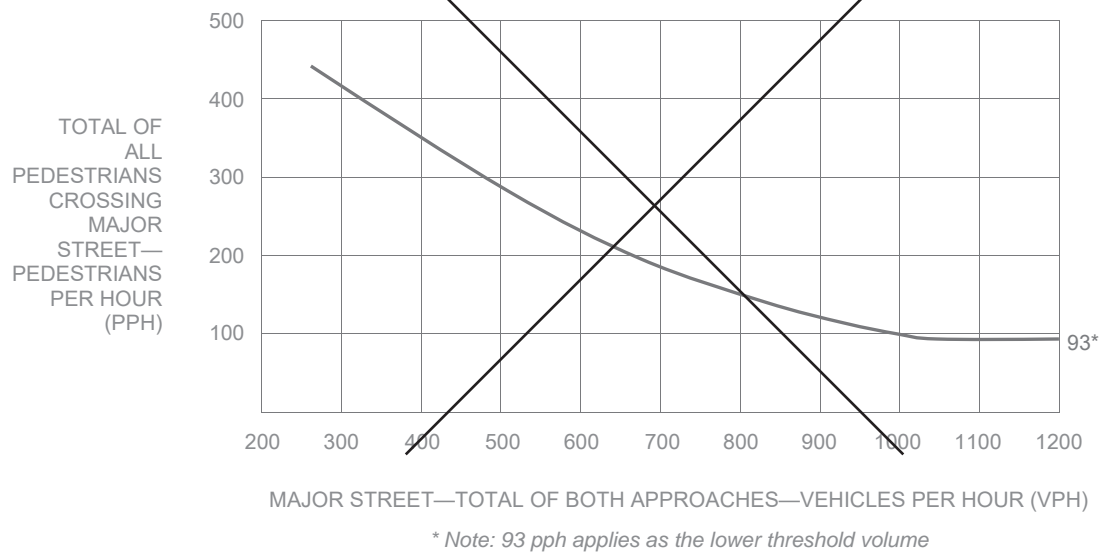
Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



School Crossing

WARRANT
5

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO																	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Minutes Children Using Crossing</td> <td style="width: 50%; padding: 5px;">Hour</td> </tr> <tr> <td style="padding: 5px;">Number of Adequate Gaps</td> <td style="padding: 5px;"></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="width: 50%; padding: 5px;"> <p style="text-align: center;">Gaps < Minutes AND Children ≥ 20/hr</p> </div> </div> </td> </tr> <tr> <td colspan="2" style="padding: 5px;">AND, Consideration has been given to less restrictive remedial measures</td> </tr> </table> </div> <div style="width: 40%; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 5px;">YES</th> <th style="width: 50%; padding: 5px;">NO</th> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table> </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Minutes Children Using Crossing</td> <td style="width: 50%; padding: 5px;">Hour</td> </tr> <tr> <td style="padding: 5px;">Number of Adequate Gaps</td> <td style="padding: 5px;"></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="width: 50%; padding: 5px;"> <p style="text-align: center;">Gaps < Minutes AND Children ≥ 20/hr</p> </div> </div>	Minutes Children Using Crossing	Hour	Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr		AND , Consideration has been given to less restrictive remedial measures		YES	NO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Minutes Children Using Crossing</td> <td style="width: 50%; padding: 5px;">Hour</td> </tr> <tr> <td style="padding: 5px;">Number of Adequate Gaps</td> <td style="padding: 5px;"></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="width: 50%; padding: 5px;"> <p style="text-align: center;">Gaps < Minutes AND Children ≥ 20/hr</p> </div> </div>	Minutes Children Using Crossing	Hour	Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr																	
Minutes Children Using Crossing	Hour																						
Number of Adequate Gaps																							
School Age Pedestrians Crossing Street / hr																							
AND , Consideration has been given to less restrictive remedial measures																							
YES	NO																						
<input type="checkbox"/>	<input type="checkbox"/>																						
<input type="checkbox"/>	<input type="checkbox"/>																						
<input type="checkbox"/>	<input type="checkbox"/>																						

PART B		SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
The distance to the nearest traffic signal along the major street is greater than 300 ft		<input type="checkbox"/>	<input type="checkbox"/>	
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	

Coordinated Signal System

WARRANT
6

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		<input type="checkbox"/>

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

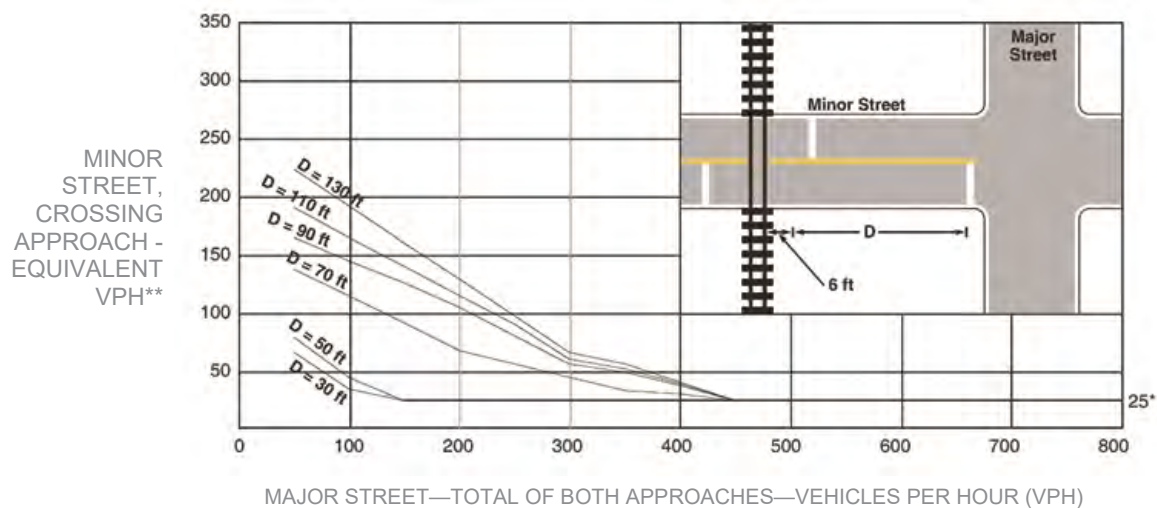
Intersection Near a Grade Crossing *(continued)*

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

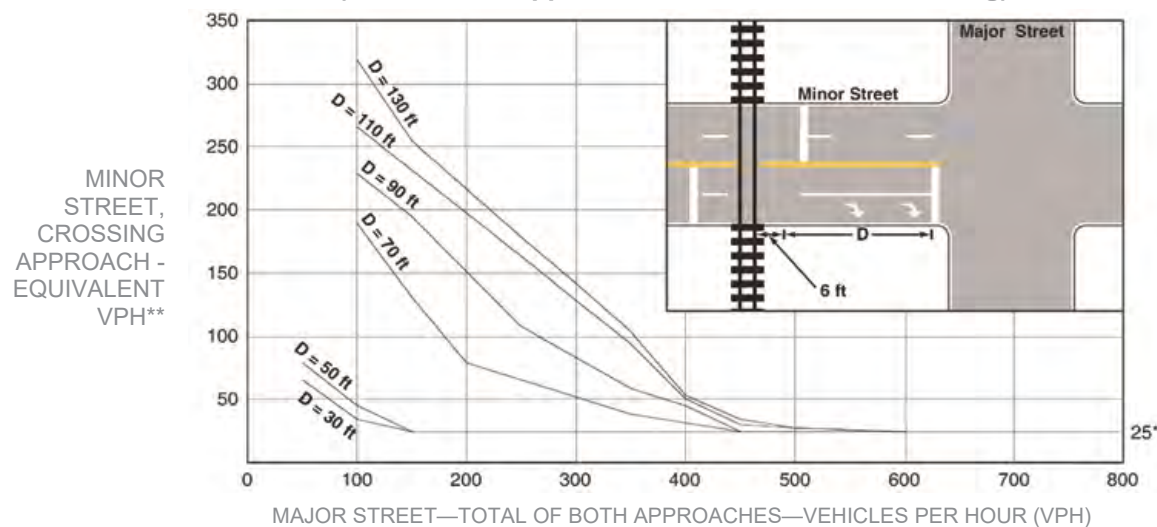
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>


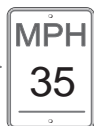
MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

Traffic Signal Warrants Worksheet

 DATE 11/30/17 PREPARER GTC REVIEWER _____

 MAJOR ST: Gower Street

 MINOR ST: US 101 NB Off-Ramp

 Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume


 N/A ☒
 SATISFIED YES ☐
 NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume (continued)

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1468								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	131								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1468								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	131								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	2 or More.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	1.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	2 or More.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	1.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

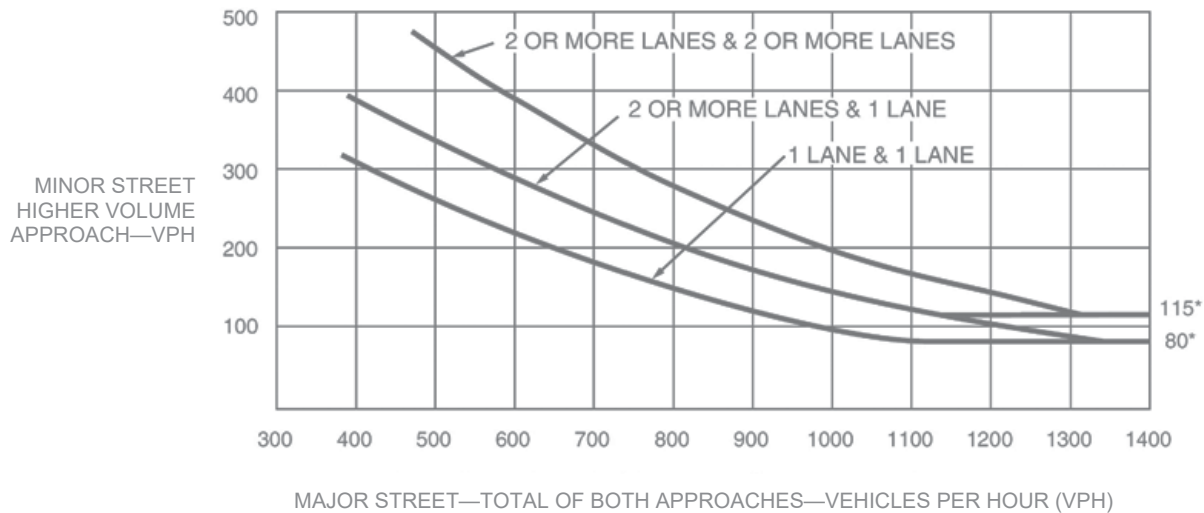
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	1468				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street		✓	131					_____ %	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

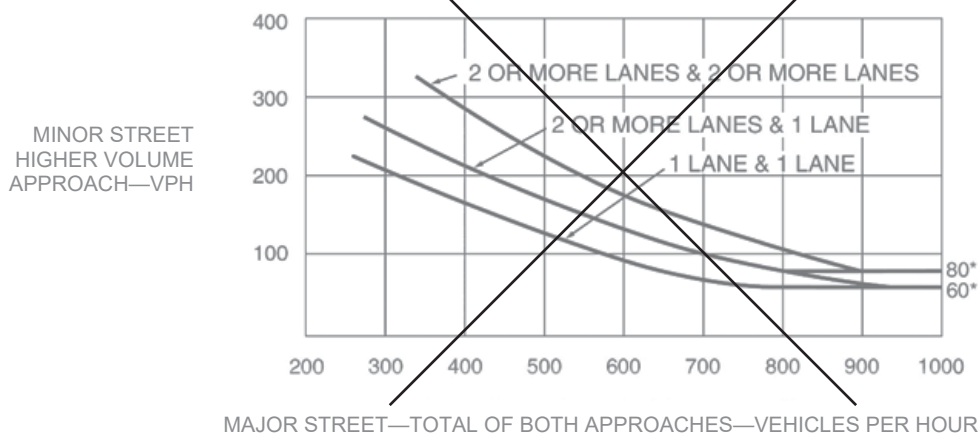
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED

YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	YES	NO	N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

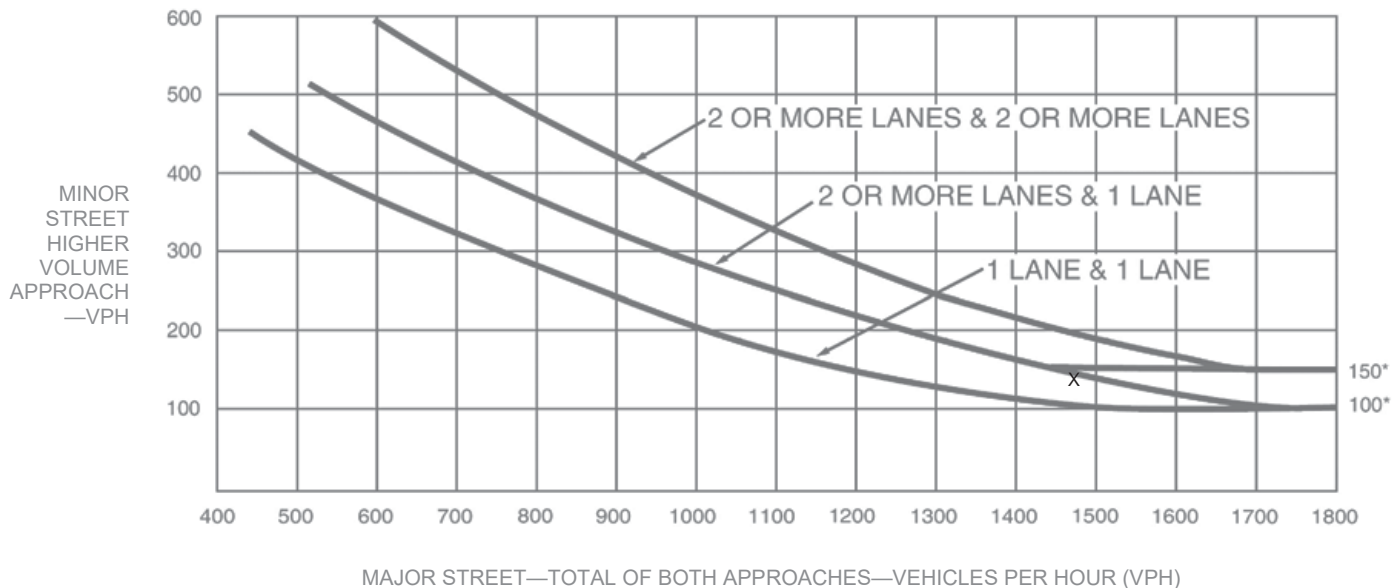
			Hour
APPROACH LANES	One	2 or More	5:00
Both Approaches - Major Street		✓	1468
Higher Approach - Minor Street		✓	131

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)		

Peak Hour (continued)

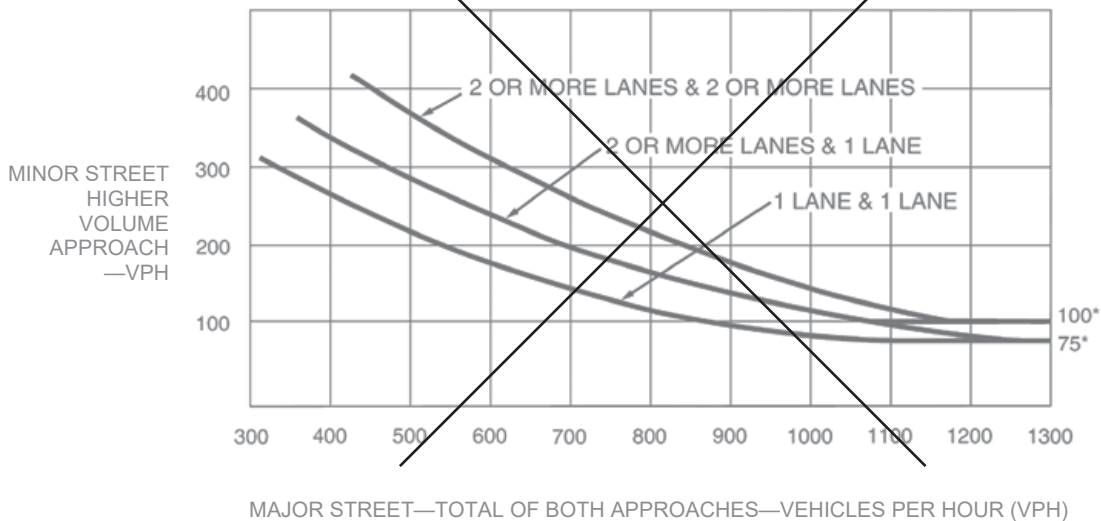
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

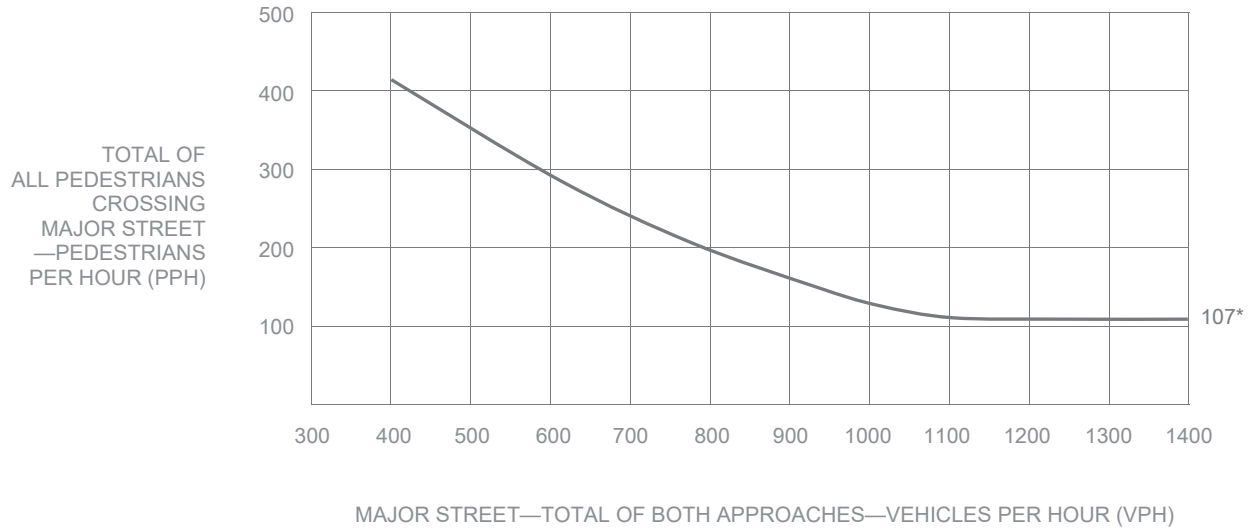
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH

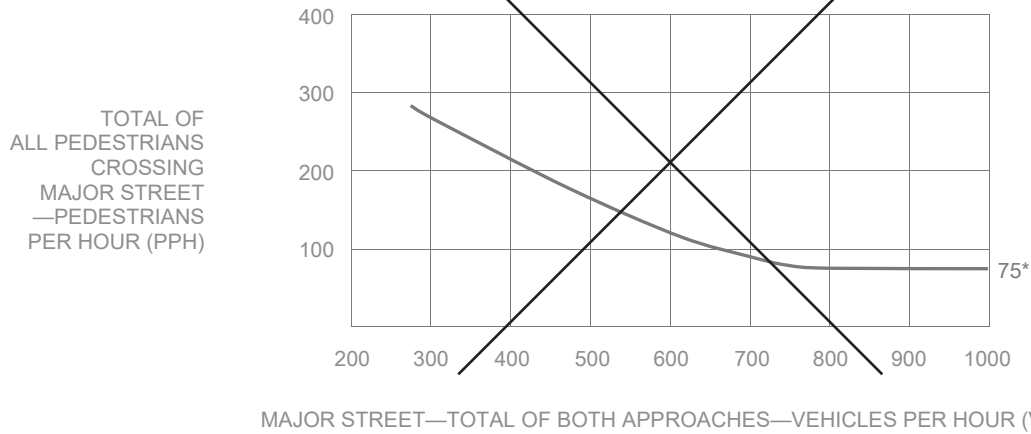
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH

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

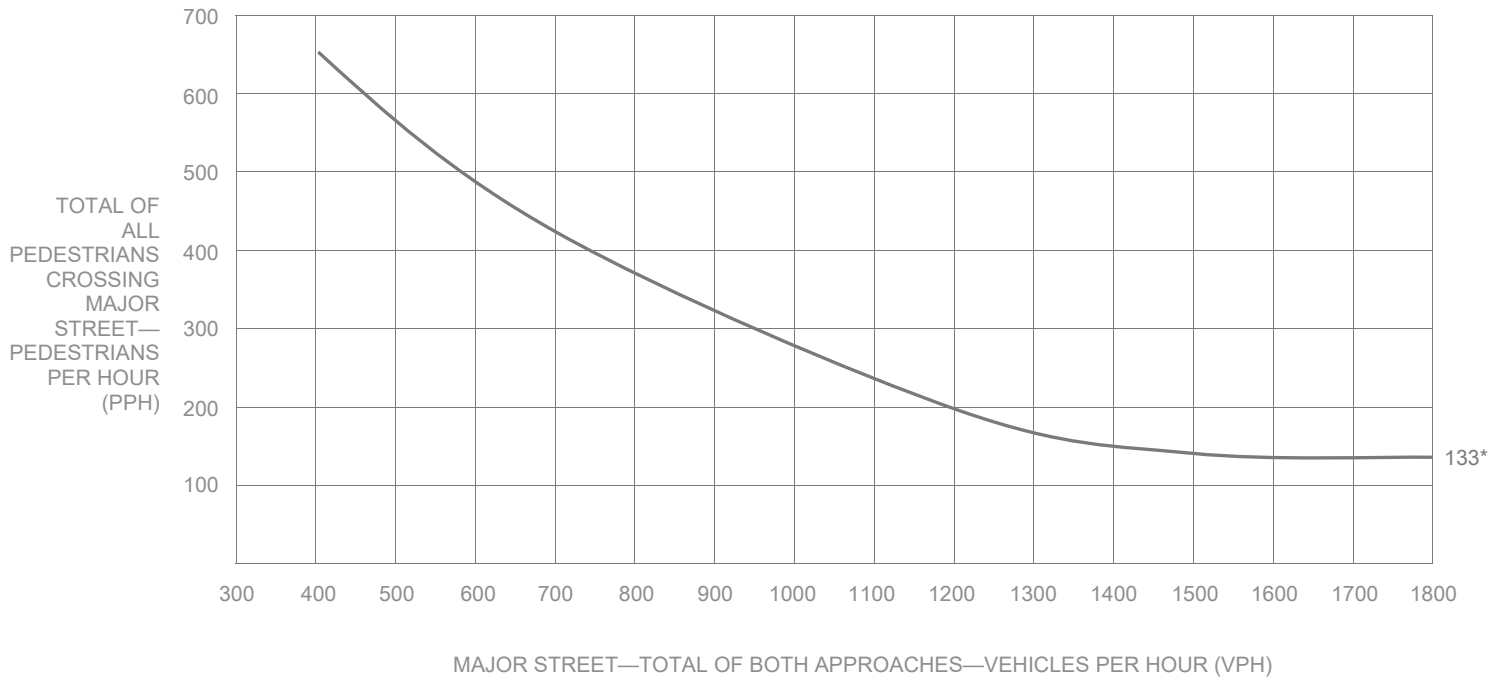


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

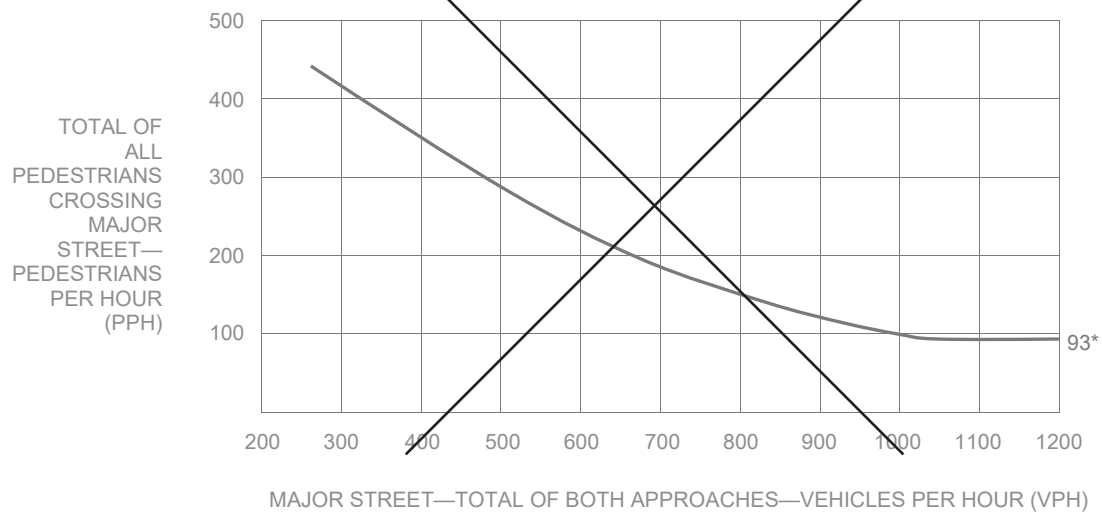
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO										
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div> </td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td style="padding: 5px;">Number of Adequate Gaps</td> <td></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> <td></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>			Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>															
	Number of Adequate Gaps															
School Age Pedestrians Crossing Street / hr																
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>											

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic	<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL		YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft		<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>	
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.				

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		<input type="checkbox"/>

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

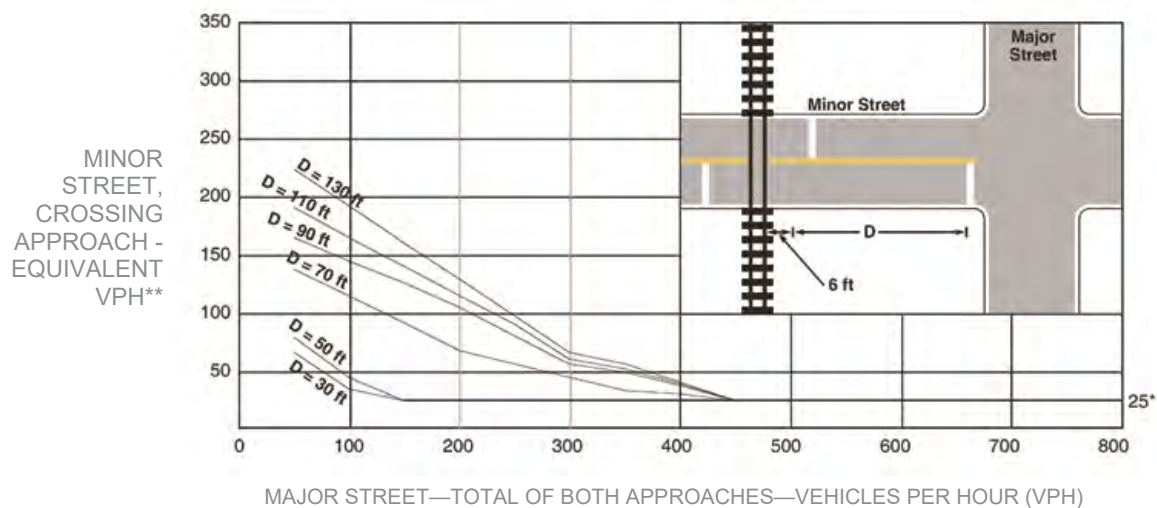
Intersection Near a Grade Crossing *(continued)*

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

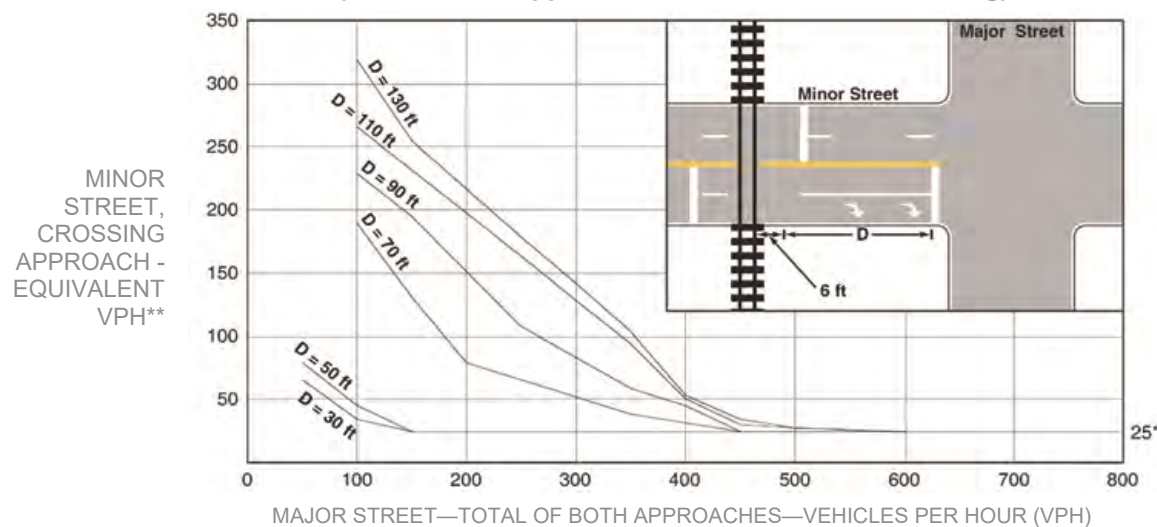
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____MAJOR ST: Gower StreetMINOR ST: US 101 SB Off-Ramp

Critical Approach Speed	}		or	Speed Limit	}	

Speed limit or critical speed on major street traffic > 40 mph.....	<input type="checkbox"/>	} RURAL (R)	<input checked="" type="checkbox"/> URBAN (U)
In built up area of isolated community of < 10,000 population.....	<input type="checkbox"/>		

Eight-Hour Vehicular Volume



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		08:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	980								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	238								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		08:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	980								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	238								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	N/A <input type="checkbox"/>	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

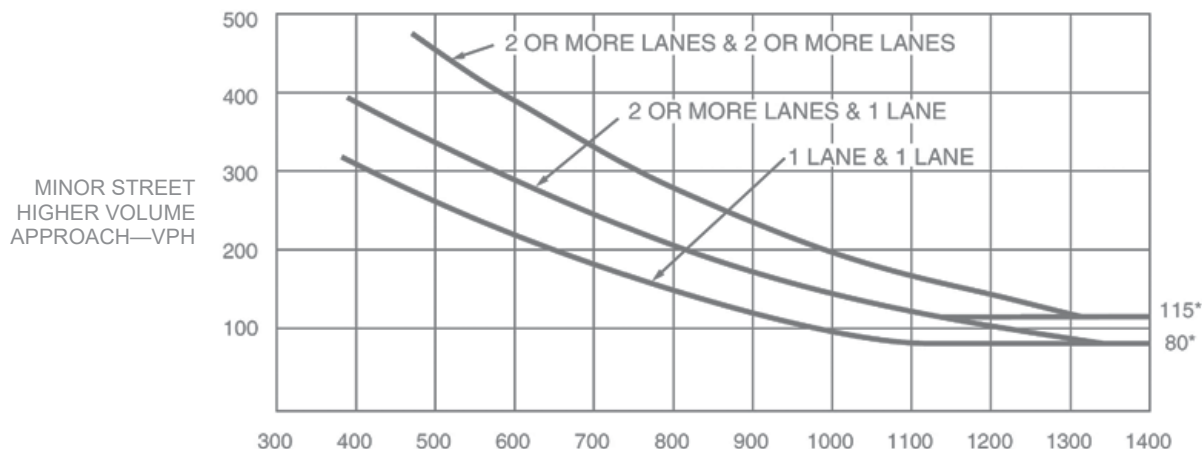
APPROACH LANES			Hours					YES	NO
	One	2 or More	08:00						
Both Approaches - Major Street		✓	980				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		238					<input type="checkbox"/>	<input type="checkbox"/>
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

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

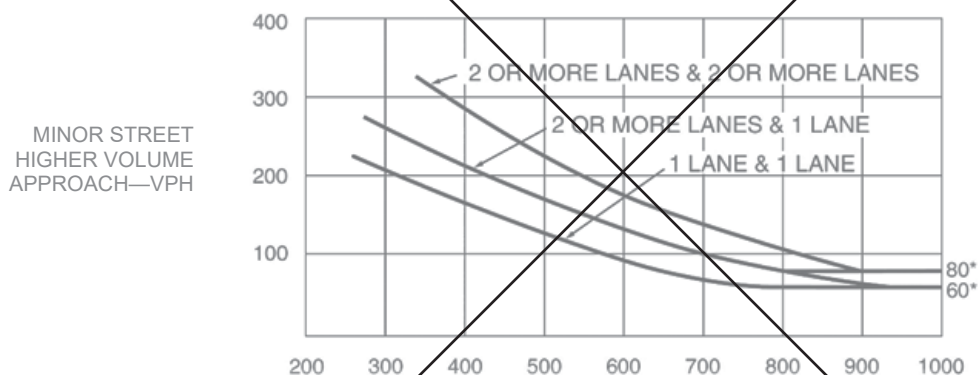


MAJOR STREET—TOTAL OF BOTH APPROACHES—VEHICLES PER HOUR (VPH)

*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.

RURAL

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



MAJOR STREET—TOTAL OF BOTH APPROACHES—VEHICLES PER HOUR (VPH)

*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.

Peak Hour

WARRANT
3

N/A
☐

SATISFIED
YES
☒

NO
☐

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
		YES	NO
		YES	NO
		YES	NO

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
		YES	NO

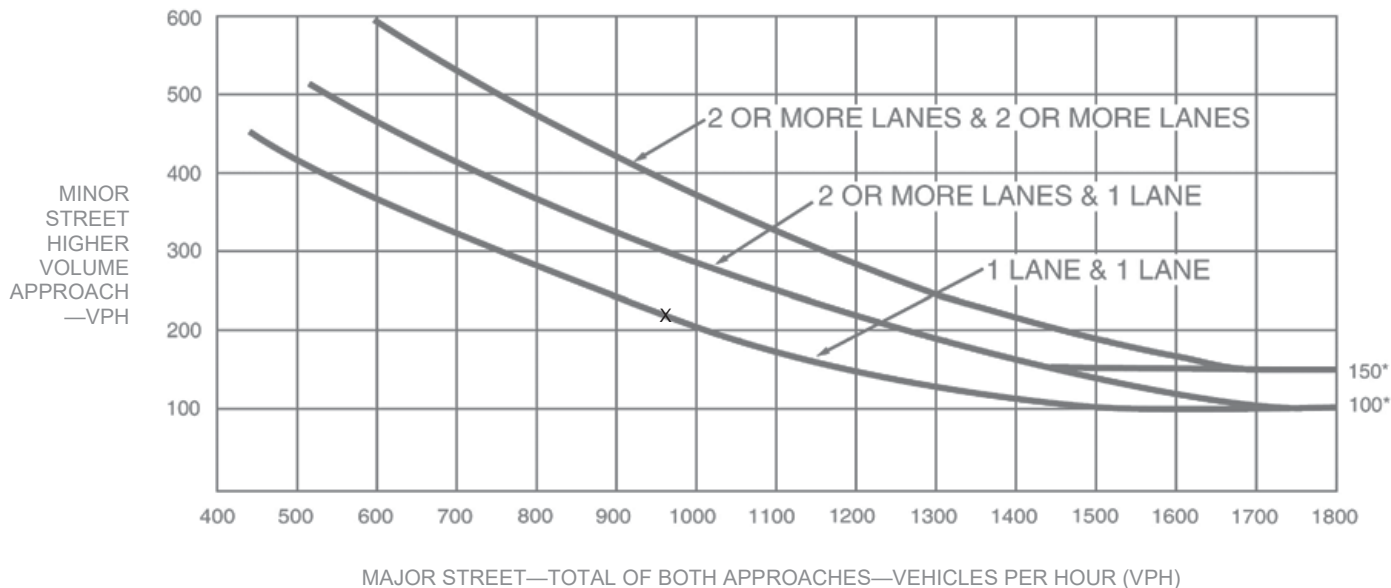
APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		✓	8:00
Higher Approach - Minor Street	✓		238

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Peak Hour (continued)

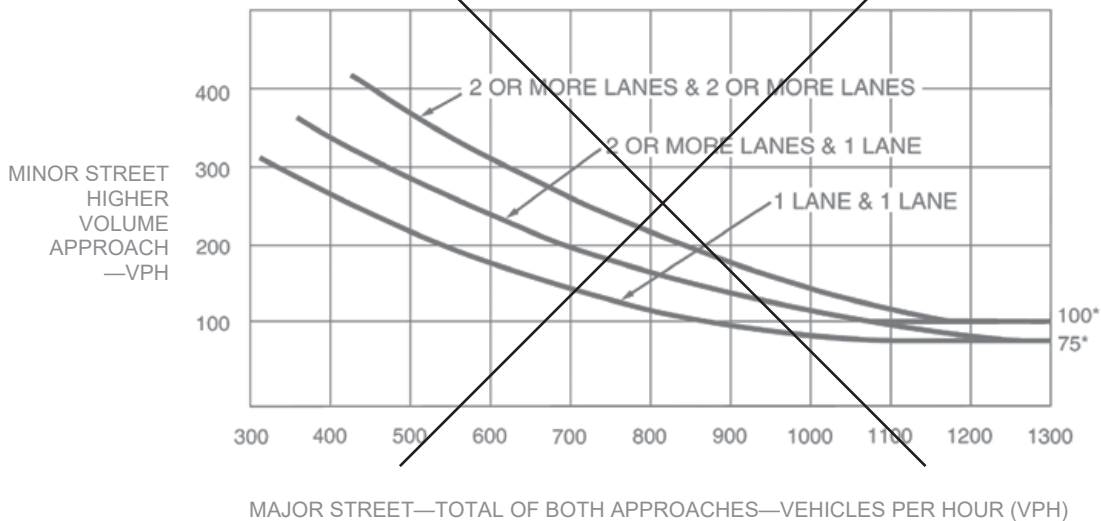
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

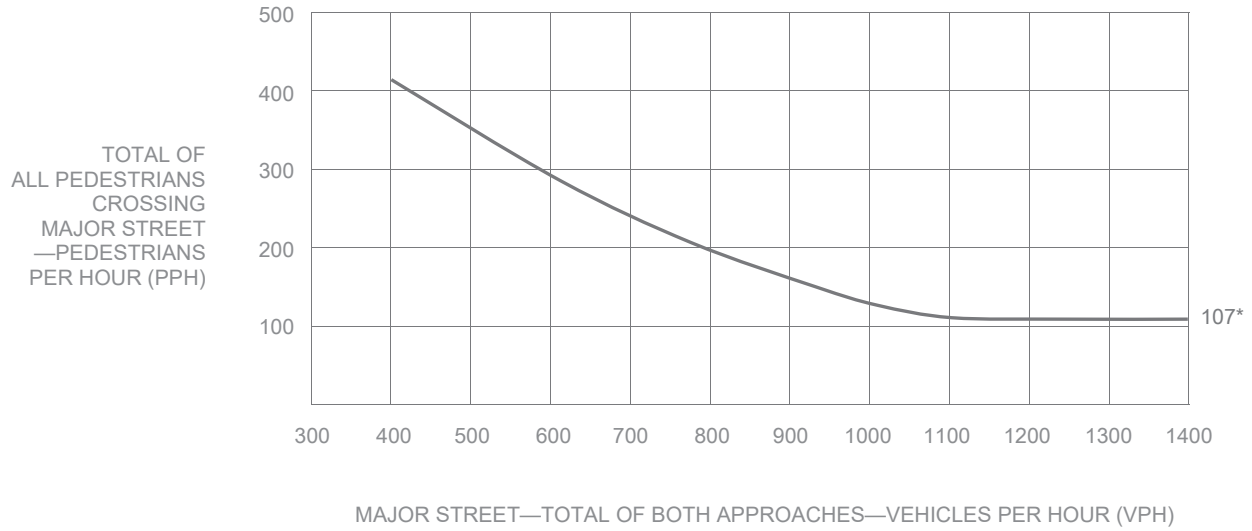
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

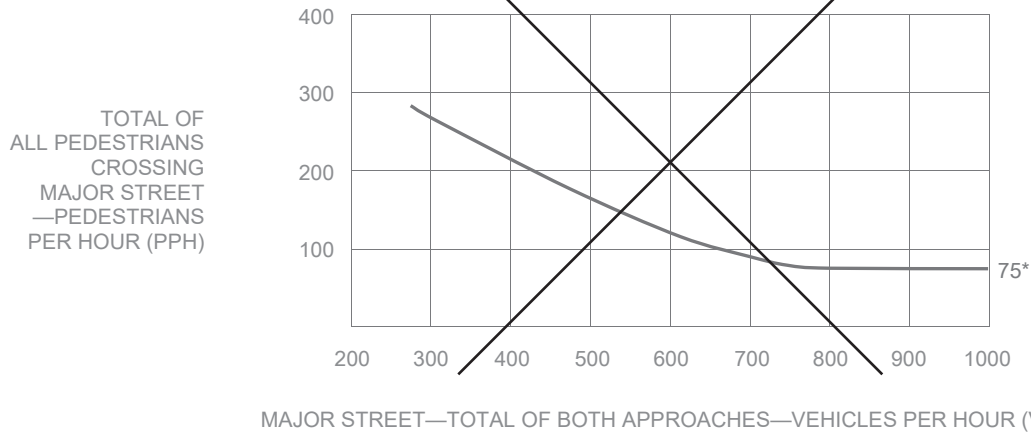
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

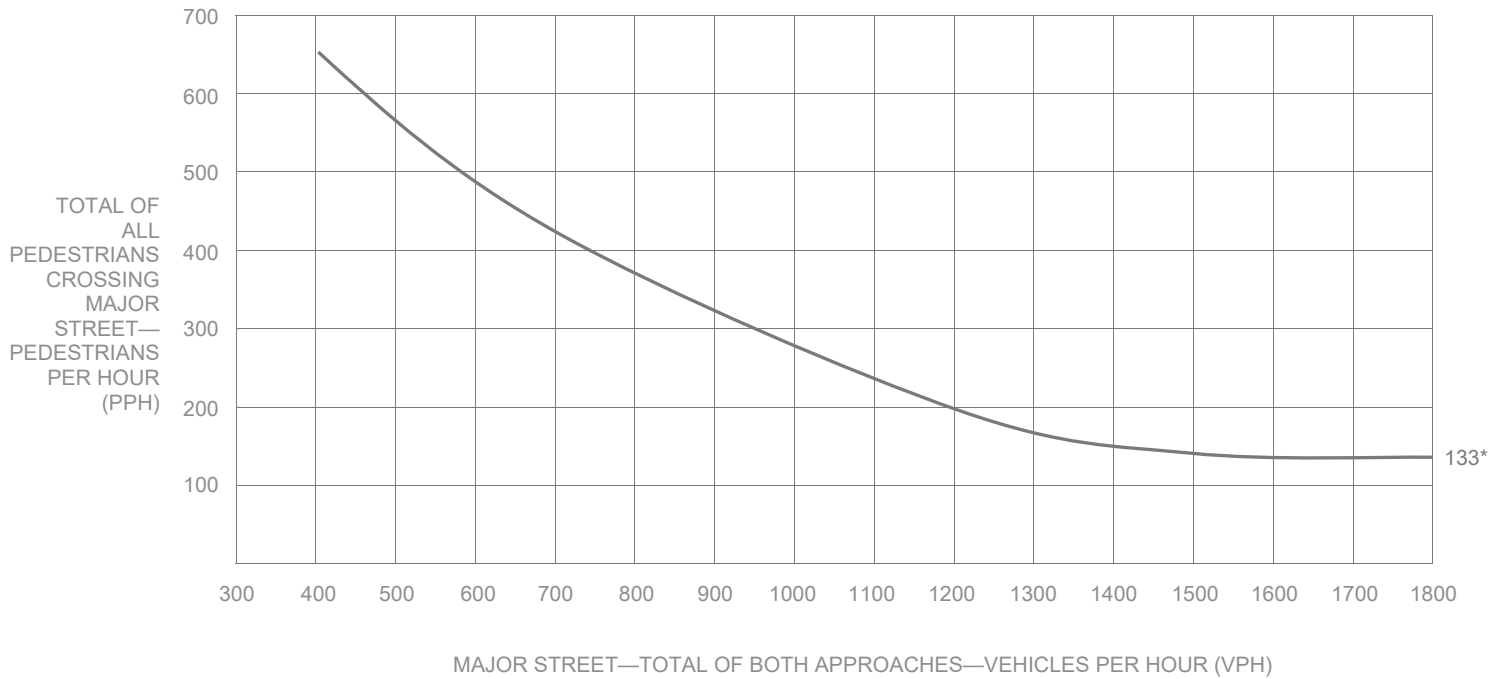


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO			
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div> </td> </tr> </table> </div> <div style="width: 40%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>								
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>				

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic	<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

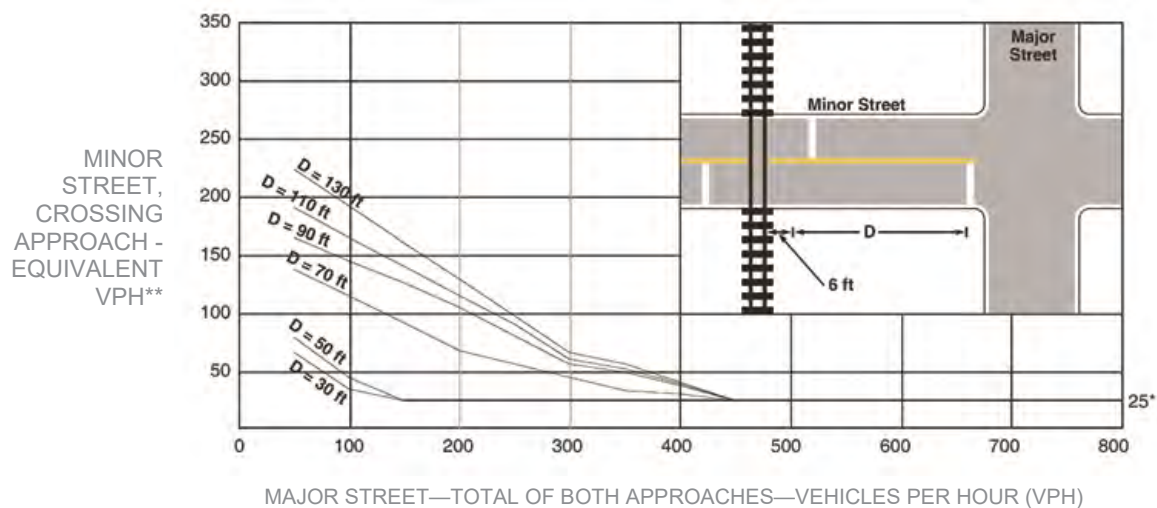
Intersection Near a Grade Crossing *(continued)*

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

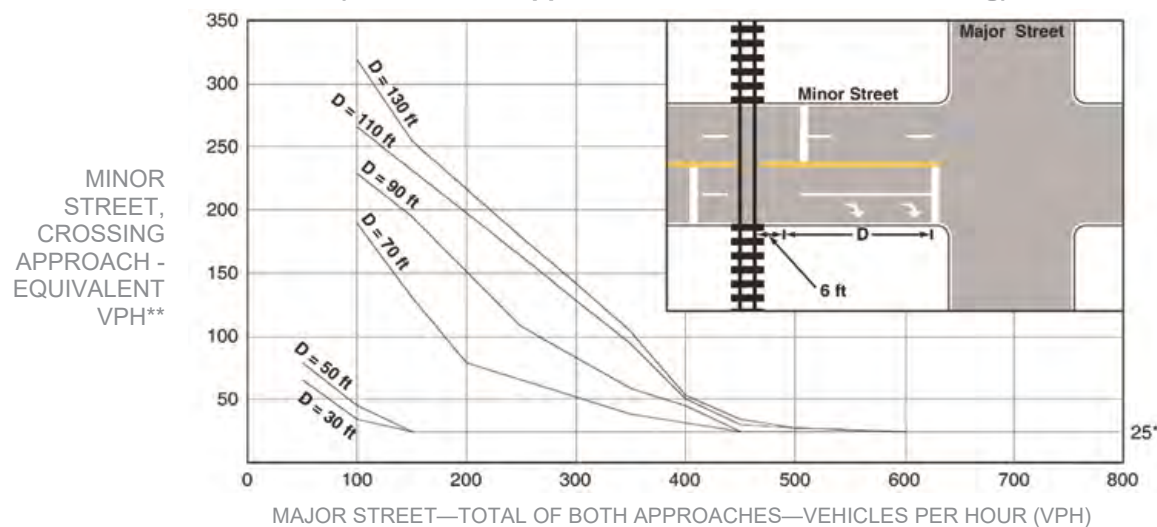
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____MAJOR ST: Gower StreetMINOR ST: US 101 SB Off-Ramp

Critical Approach Speed	}		or	Speed Limit	}	

Speed limit or critical speed on major street traffic > 40 mph.....	<input type="checkbox"/>	} RURAL (R)	<input checked="" type="checkbox"/> URBAN (U)
In built up area of isolated community of < 10,000 population.....	<input type="checkbox"/>		

Eight-Hour Vehicular Volume



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A
Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> _____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	989	08:00							
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	238								

Condition B
Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> _____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	989	08:00							
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	238								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

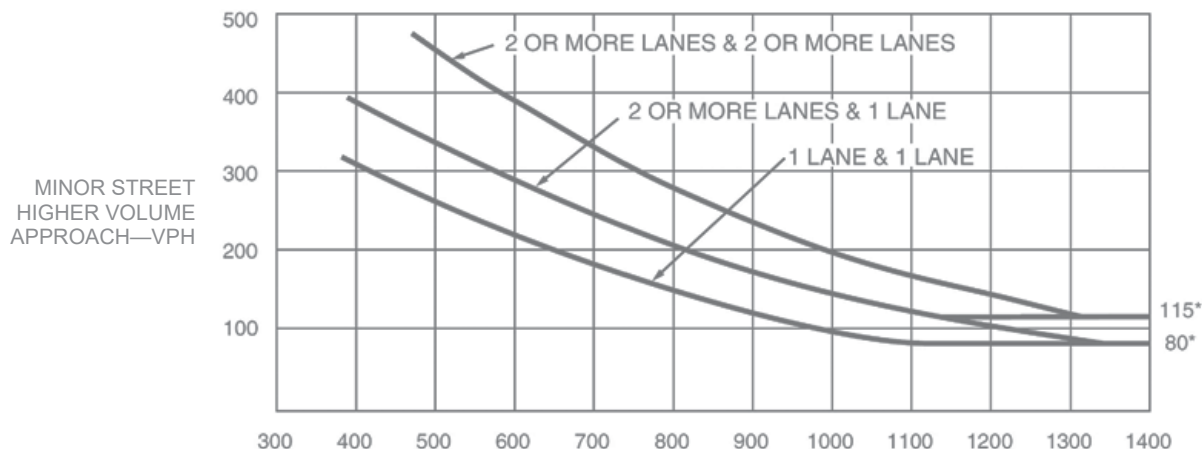
APPROACH LANES			Hours					YES	NO
	One	2 or More	08:00						
Both Approaches - Major Street		✓	989				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		238					_____ %	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

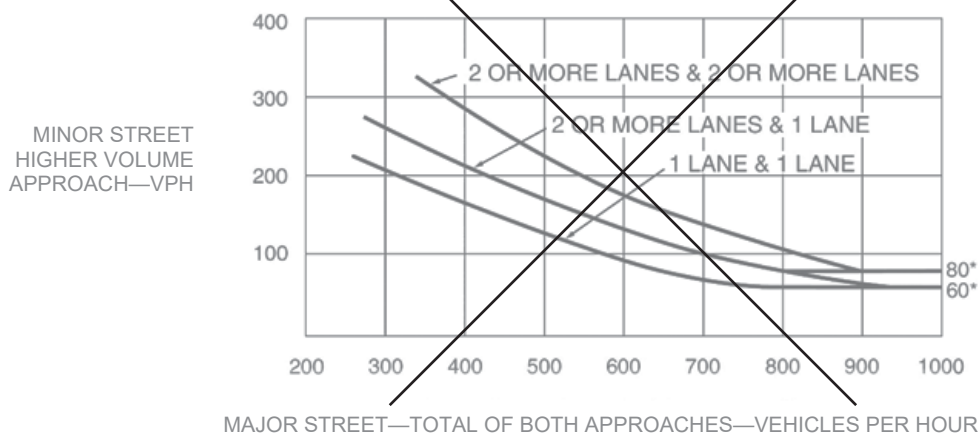
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A
☐

SATISFIED YES
☒

NO
☐

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	YES	NO	N/A
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

Hour

☐

☒

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		✓	8:00 989
Higher Approach - Minor Street	✓		238

YES

☐

☒

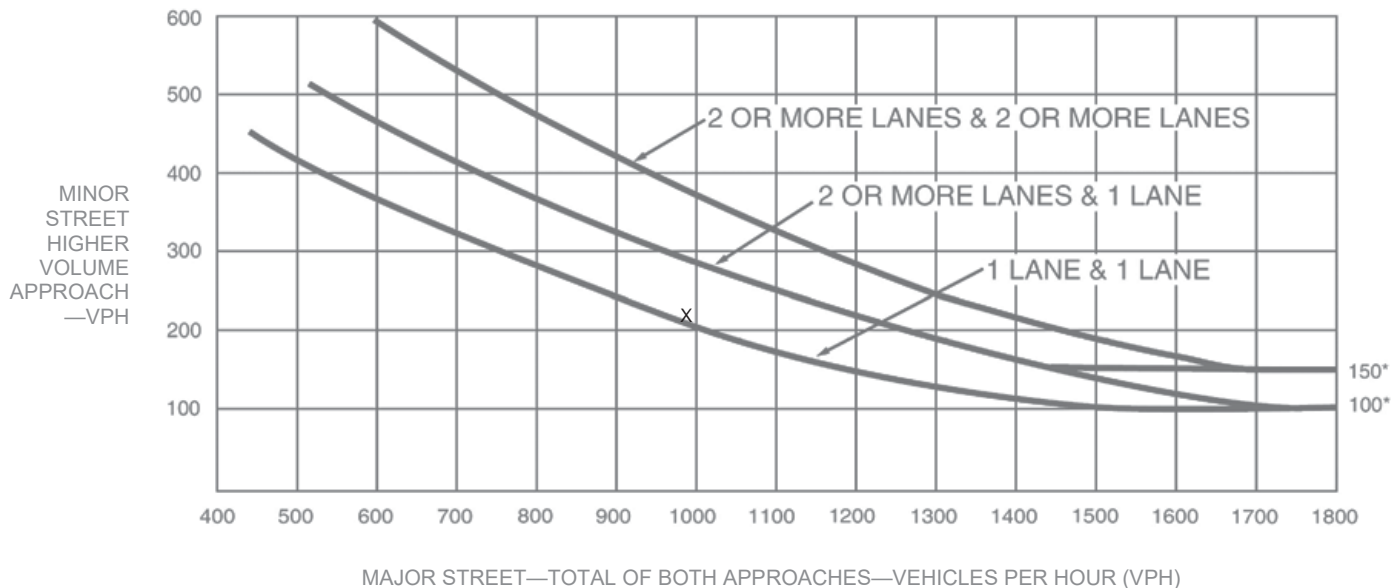
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)

OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)

Peak Hour (continued)

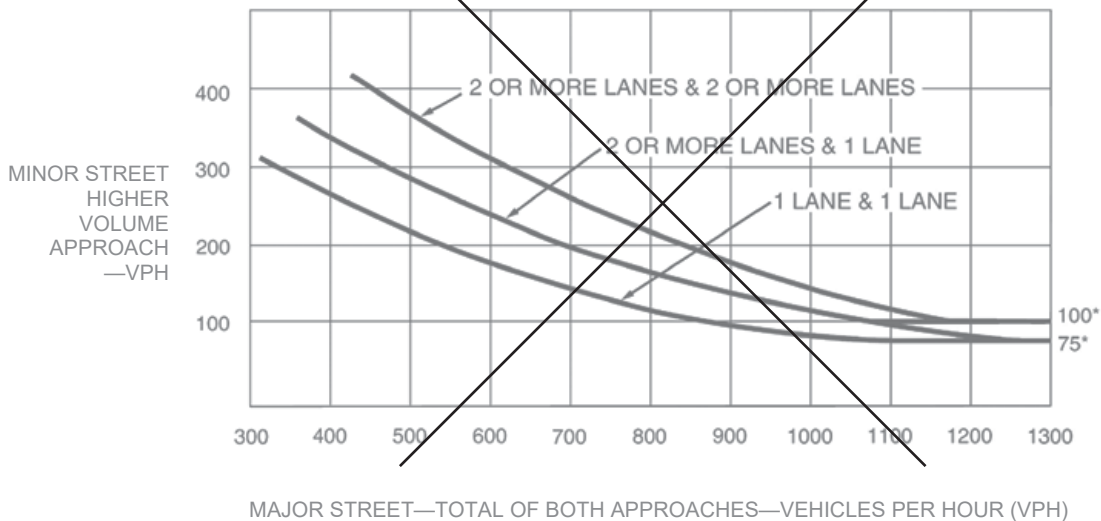
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

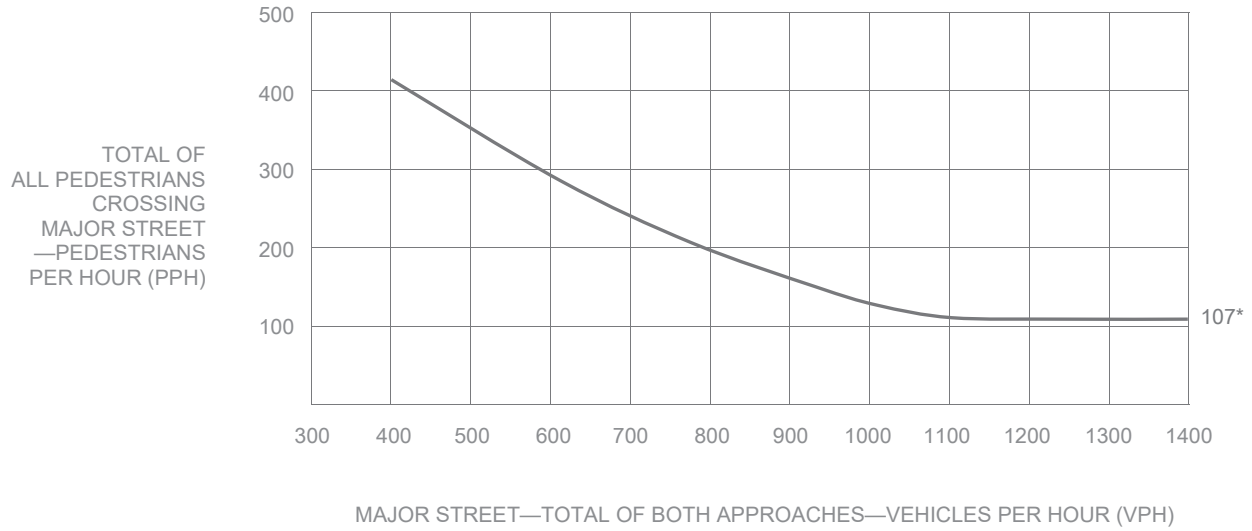
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

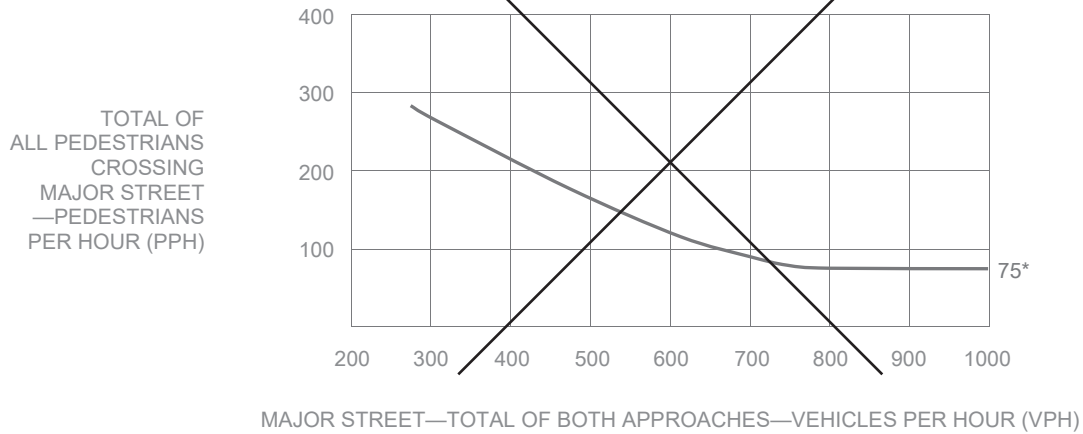
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

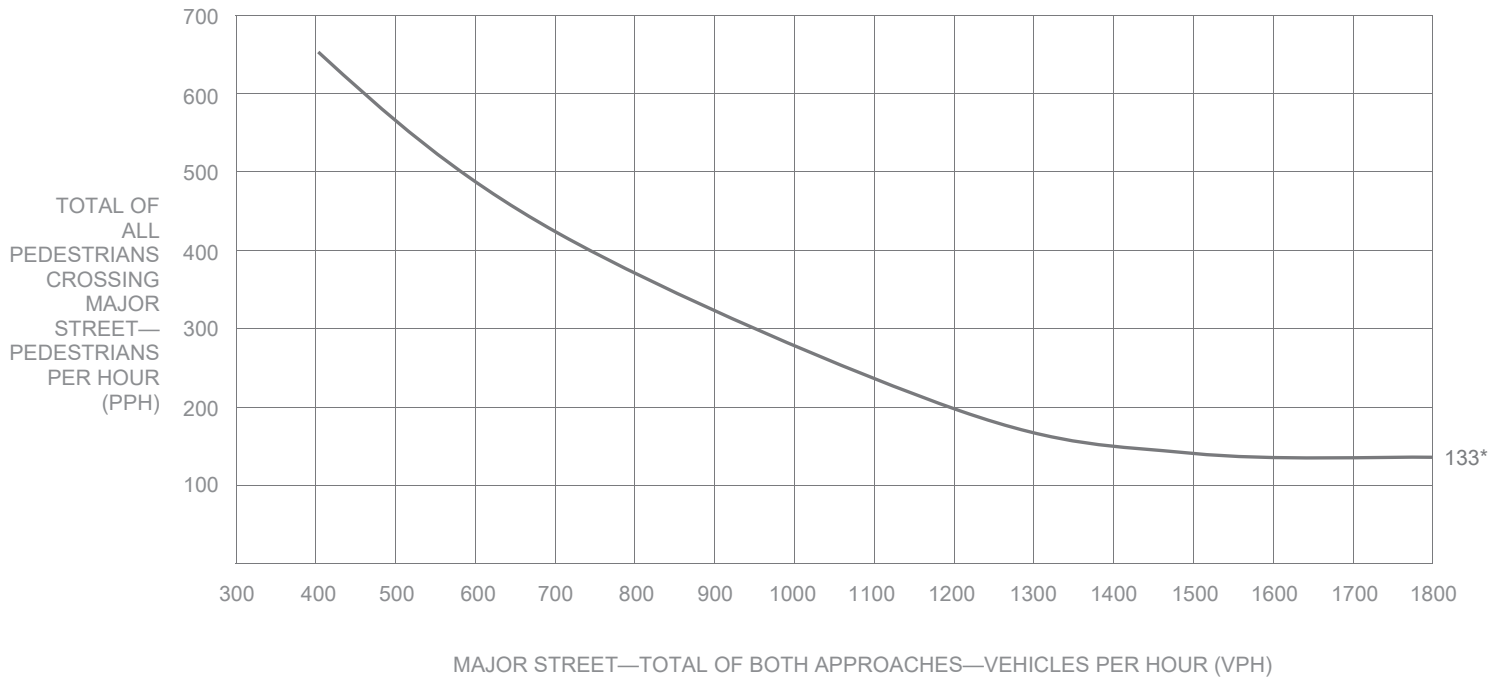


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

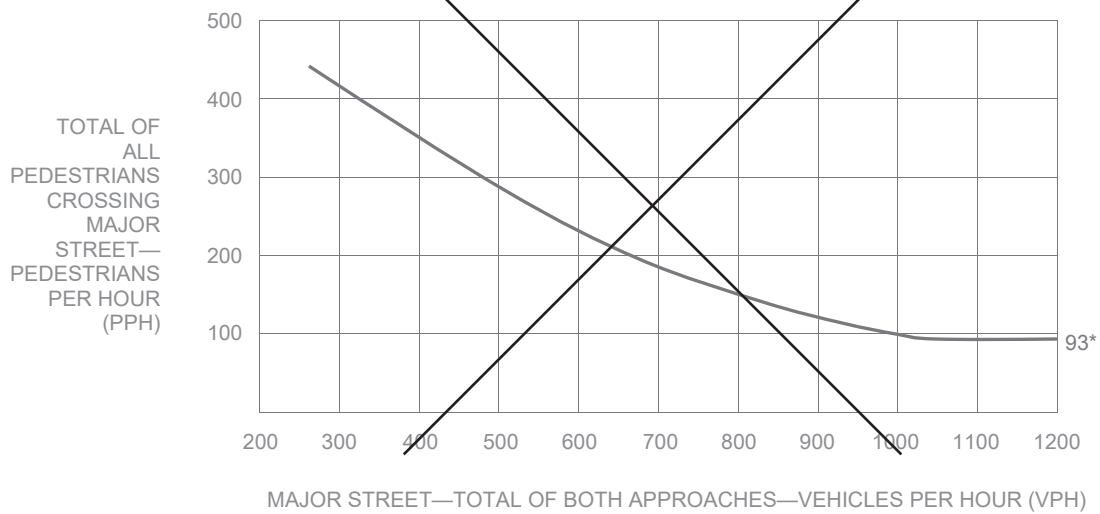
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">Minutes Children Using Crossing</div> <div style="width: 10%; text-align: center;">Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div> </td> <td style="width: 25%;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; width: 40%;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">Minutes Children Using Crossing</div> <div style="width: 10%; text-align: center;">Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">Minutes Children Using Crossing</div> <div style="width: 10%; text-align: center;">Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>												
School Age Pedestrians Crossing Street / hr													
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

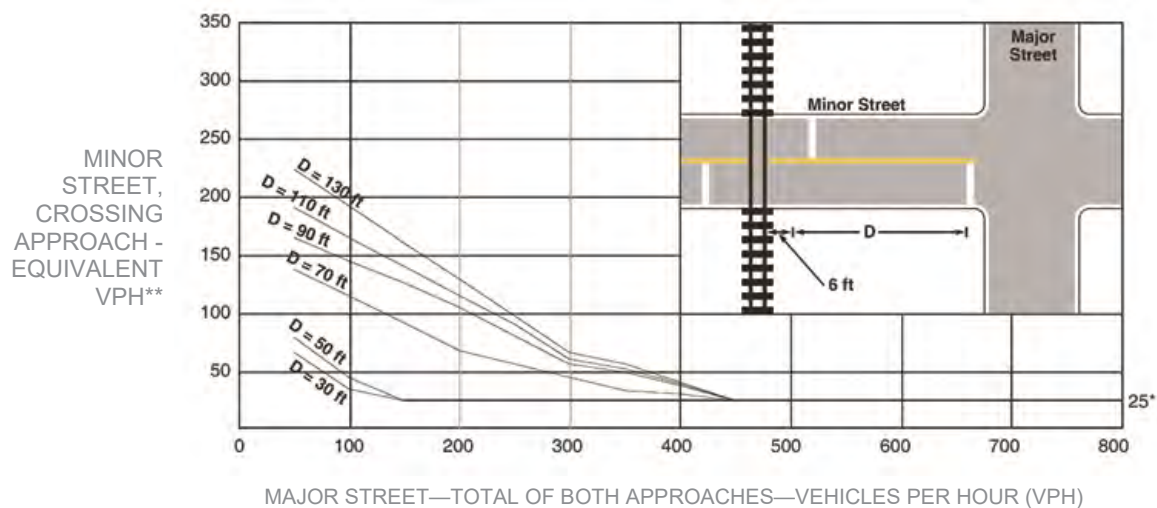
Intersection Near a Grade Crossing *(continued)*

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

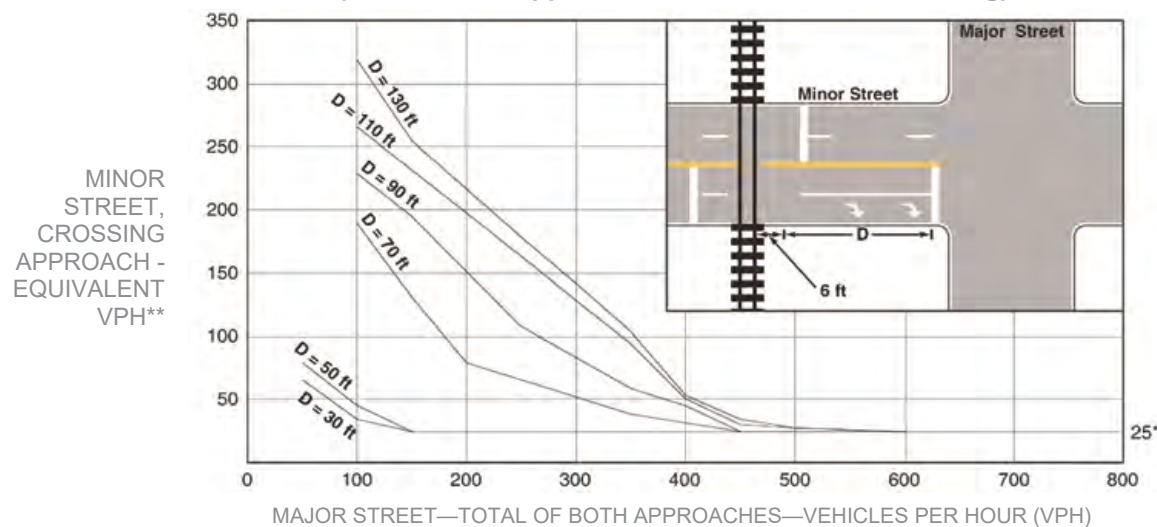
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

Traffic Signal Warrants Worksheet

 DATE 11/30/17 PREPARER GTC REVIEWER _____
MAJOR ST: Gower StreetMINOR ST: US 101 SB Off-Ramp
 Critical Approach Speed } or Speed Limit }

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

Eight-Hour Vehicular Volume


 N/A ☒
 SATISFIED YES ☐
 NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		08:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1124								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	252								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		08:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1124								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	252								

COMBINATION OF A & B

			SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

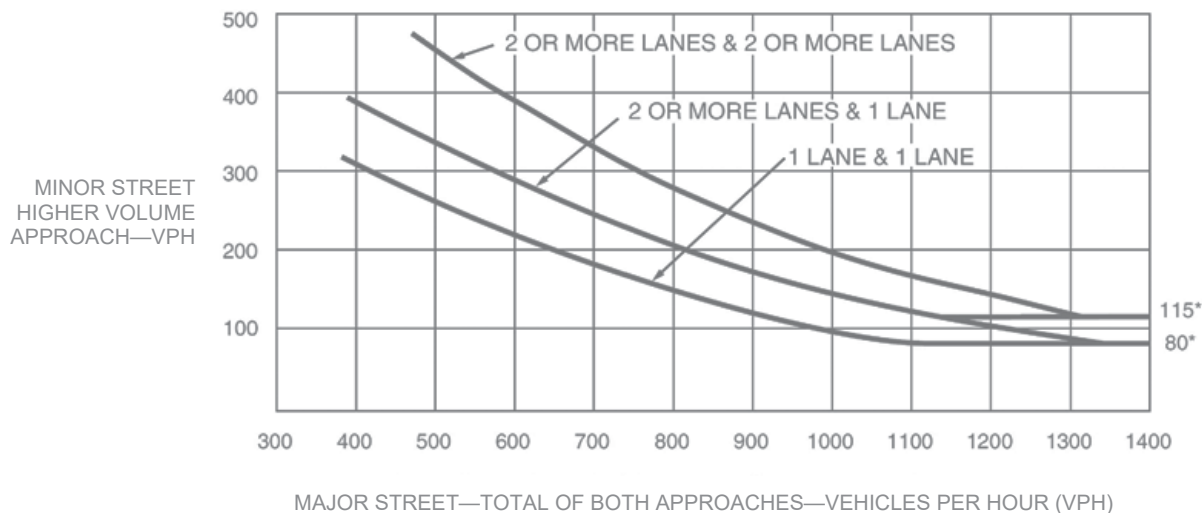
APPROACH LANES	Hours						YES	NO
	One	2 or More	08:00					
Both Approaches - Major Street		✓	1124				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		252				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

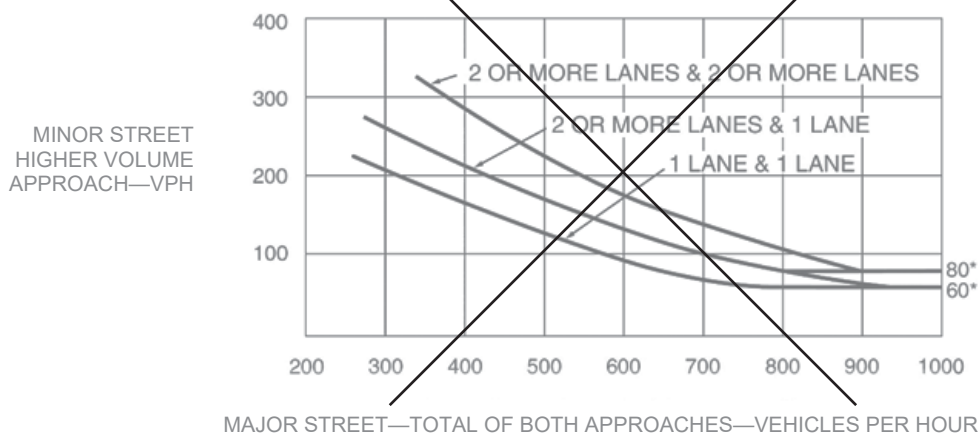
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A
☐

SATISFIED
YES
☒

NO
☐

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
		YES	NO
		YES	NO
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
		YES	NO

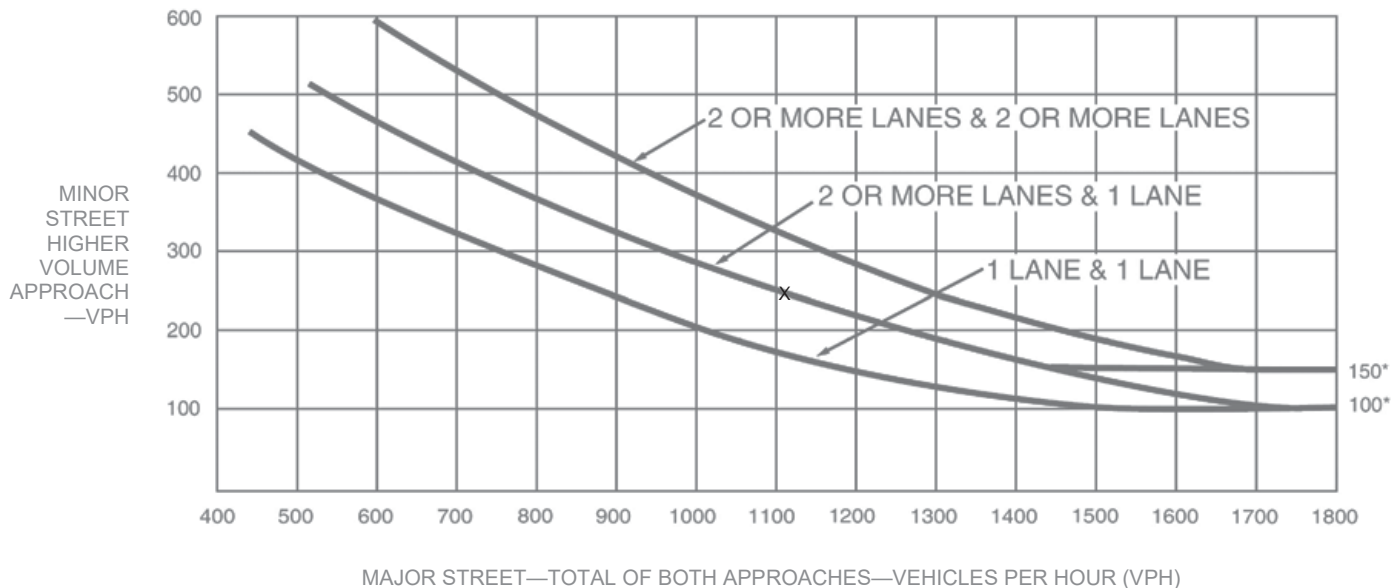
APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		✓	8:00 1124
Higher Approach - Minor Street	✓		252

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Peak Hour (continued)

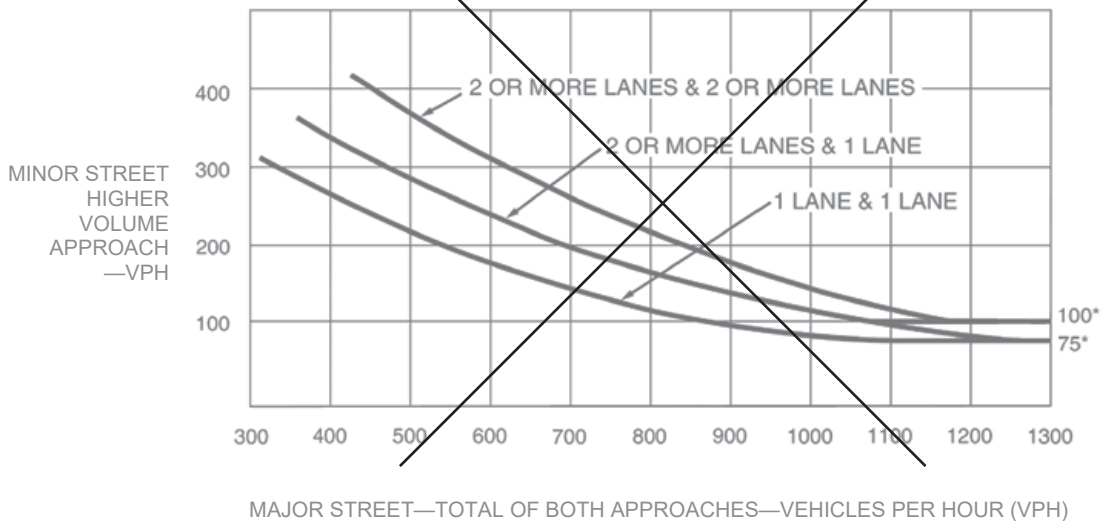
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

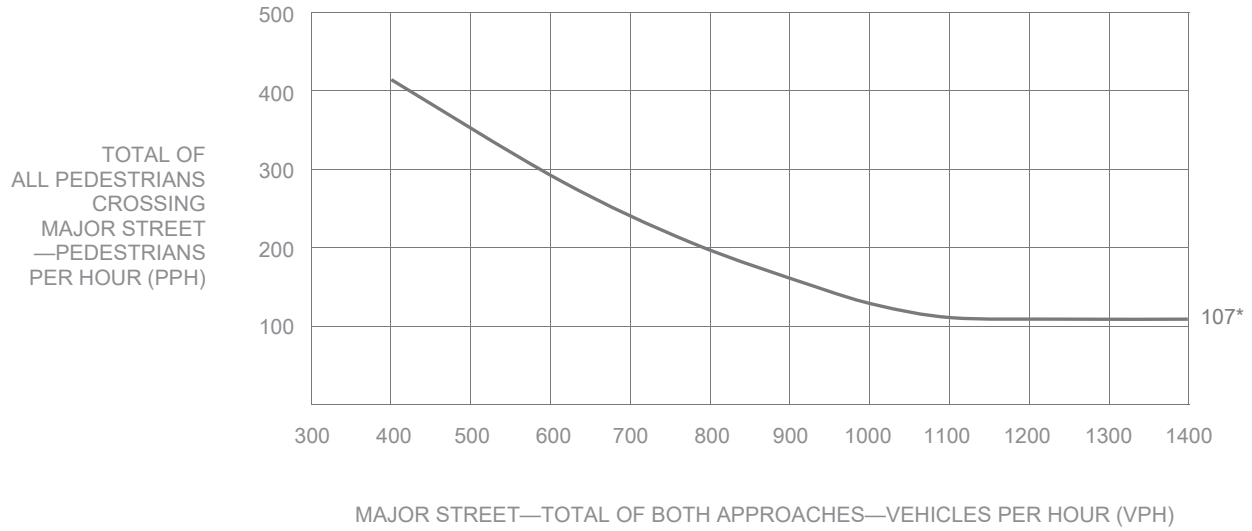
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

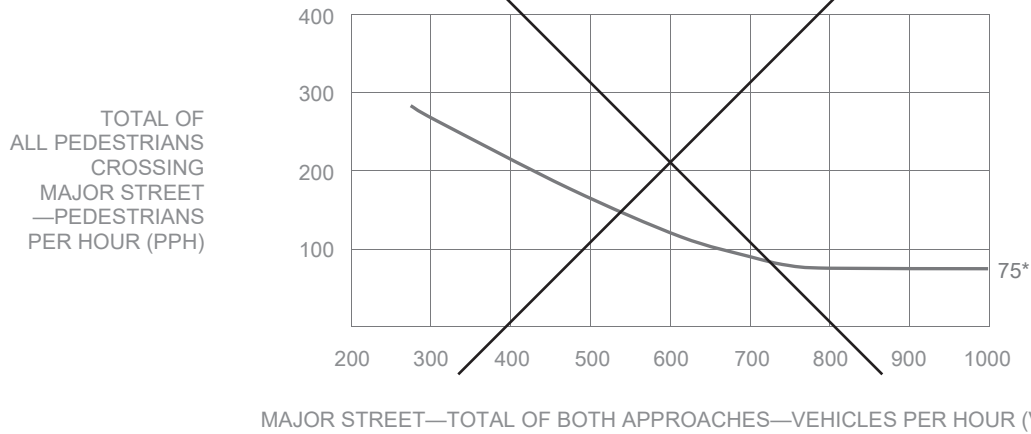
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

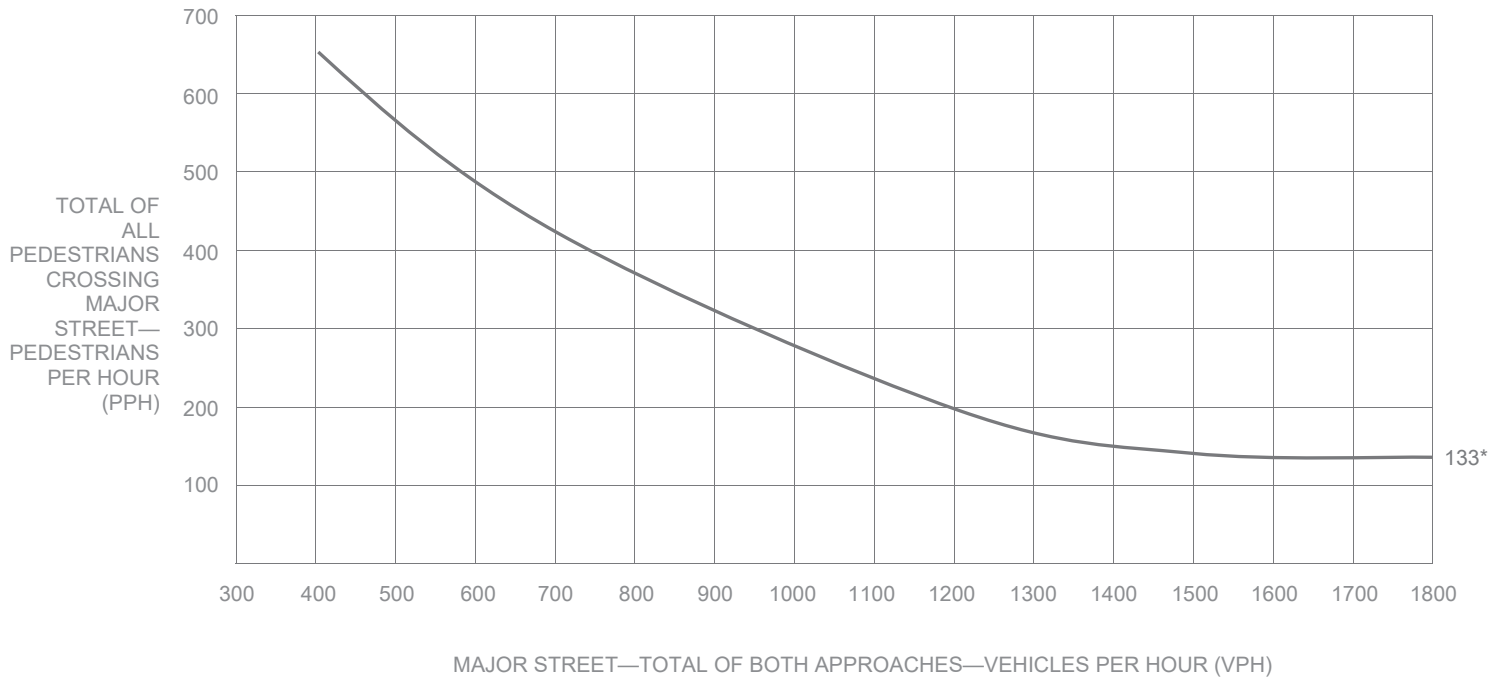


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

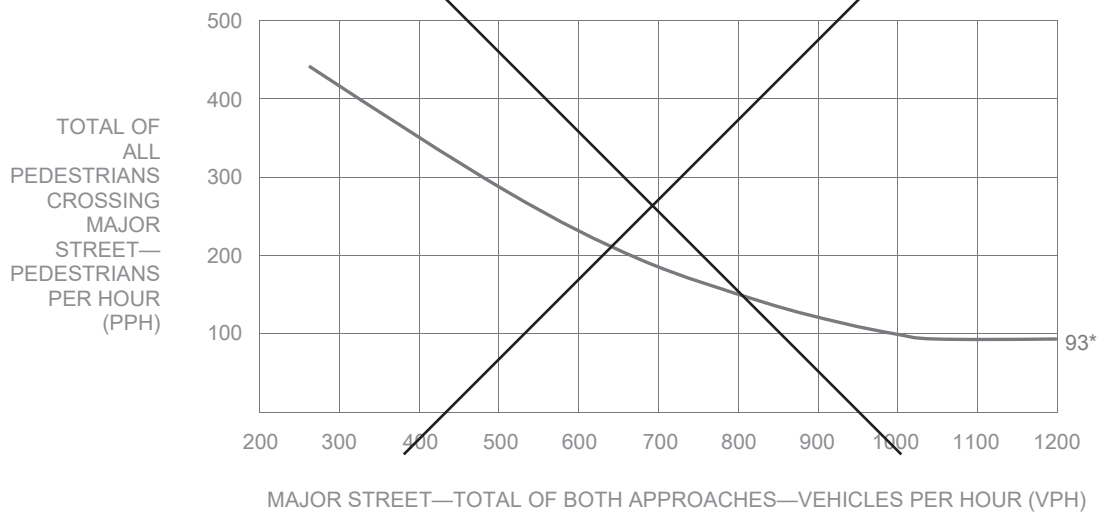
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO			
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div> </td> </tr> </table> </div> <div style="width: 40%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>								
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>				

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic	<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

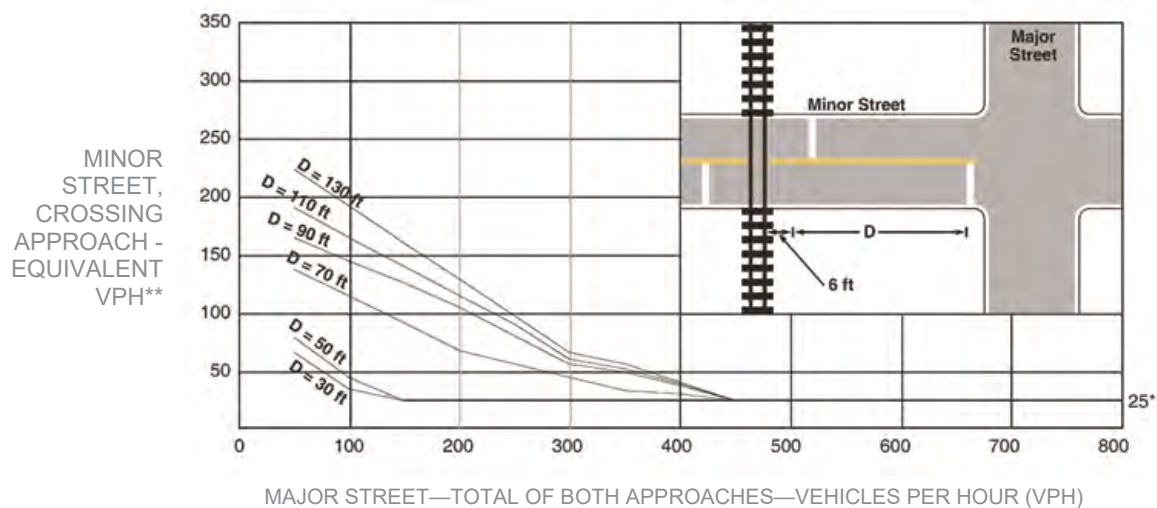
Intersection Near a Grade Crossing *(continued)*

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

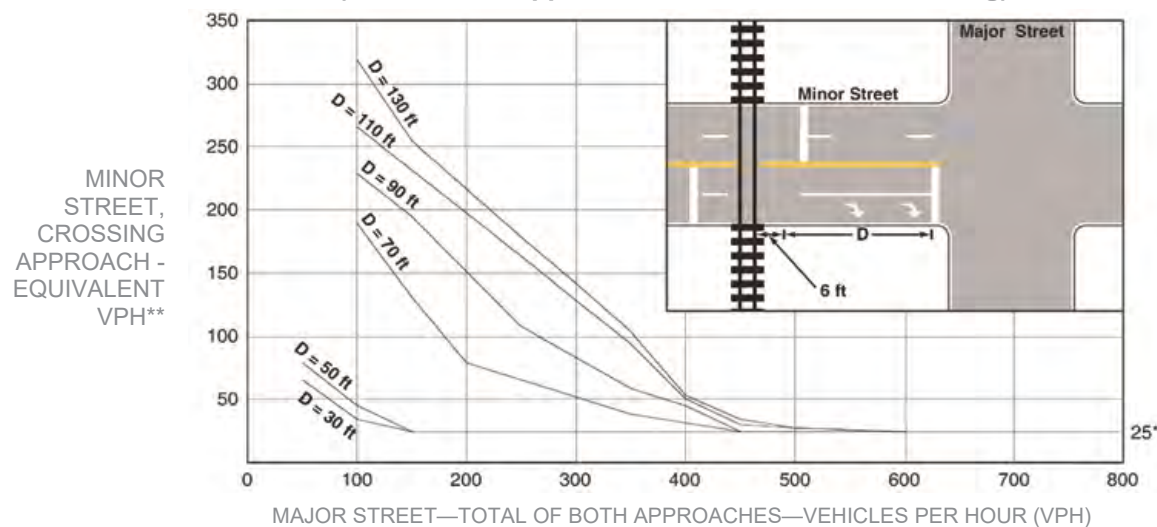
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.


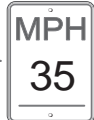
PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: US 101 SB Off-Ramp

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More										
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1133	08:00							
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	252								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More										
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1133	08:00							
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	252								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	N/A <input type="checkbox"/>	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	2 or More.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	1.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	2 or More.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	1.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

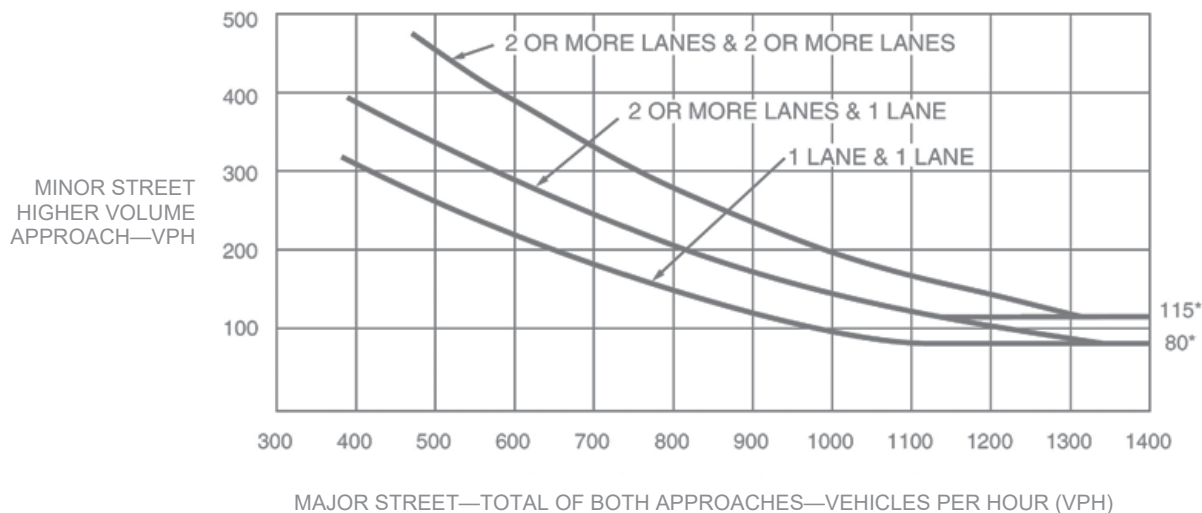
APPROACH LANES	Hours						YES	NO
	One	2 or More	08:00					
Both Approaches - Major Street		✓	1133				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		252				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

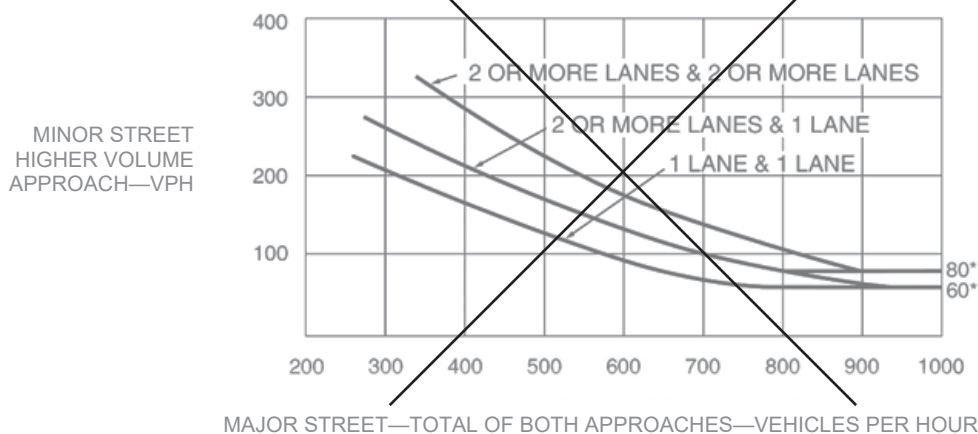
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour	WARRANT 3	N/A	<input type="checkbox"/>
		SATISFIED	YES <input checked="" type="checkbox"/>
			NO <input type="checkbox"/>

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

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)				<input checked="" type="checkbox"/>	<input type="checkbox"/>
		YES	NO	N/A	
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PART B

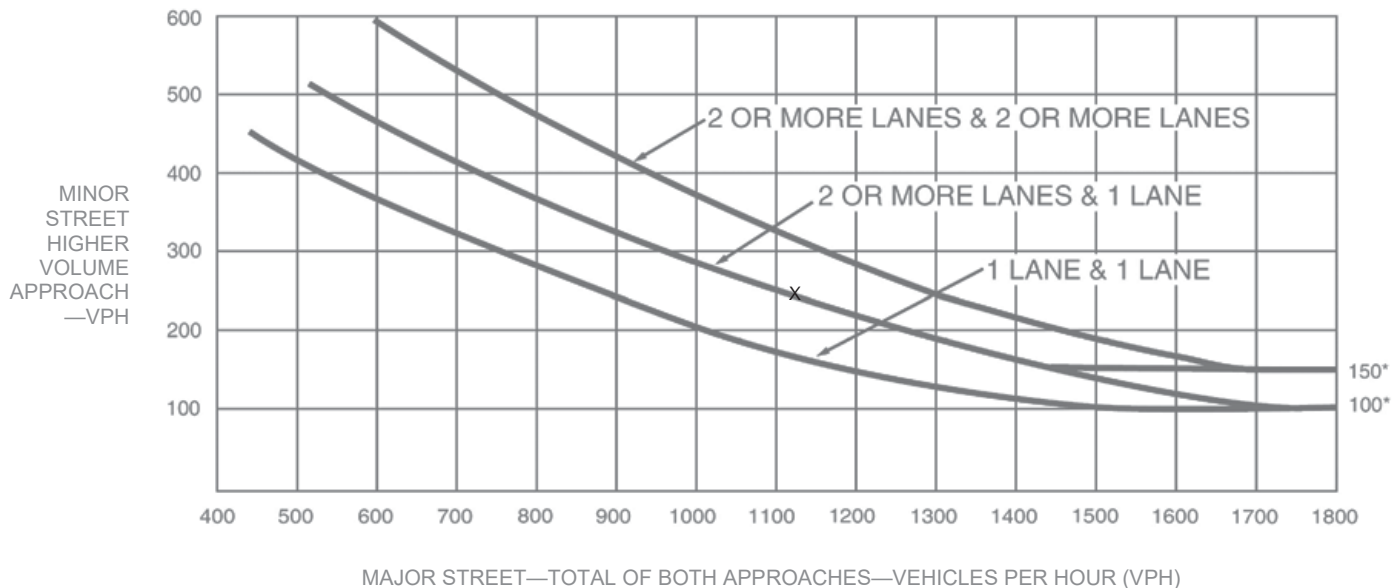
PART B				SATISFIED	YES	NO
APPROACH LANES		One	2 or More	Hour		
				8:00		
Both Approaches - Major Street		✓	1133			
Higher Approach - Minor Street	✓		252			

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Peak Hour (continued)

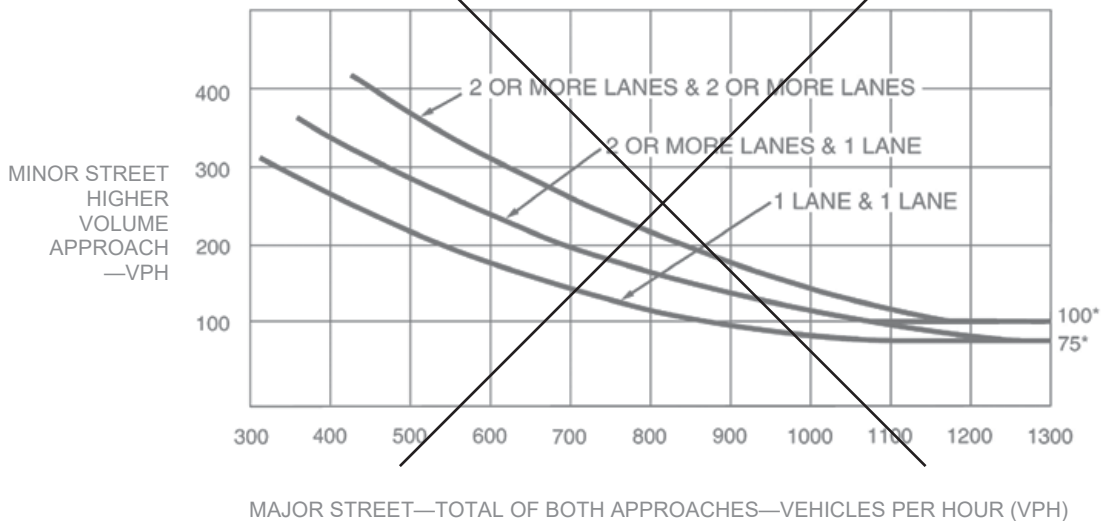
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED YES NO
☐ ☐

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

PART 2

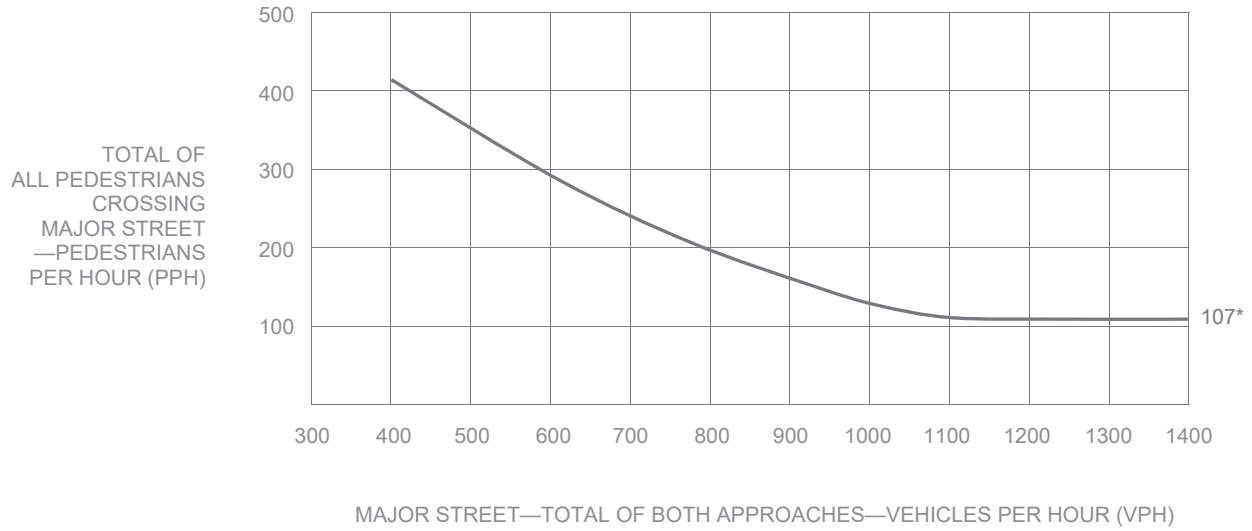
SATISFIED YES NO
☐ ☐

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

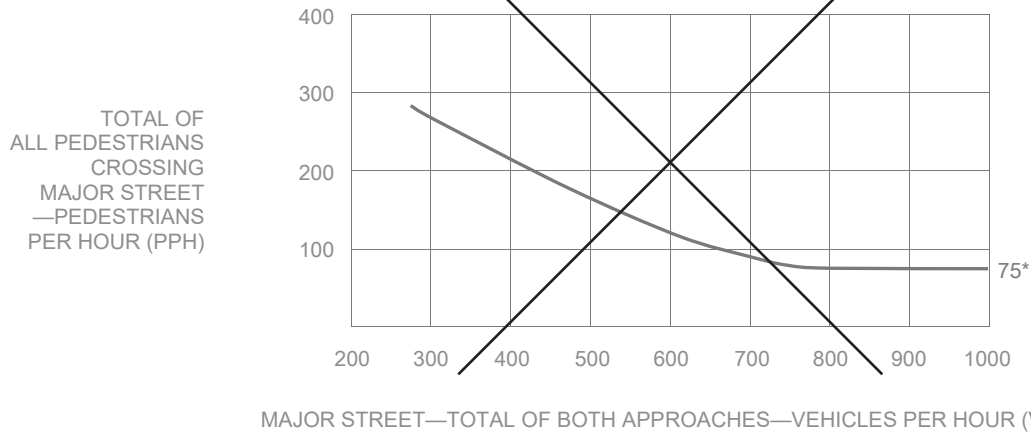
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

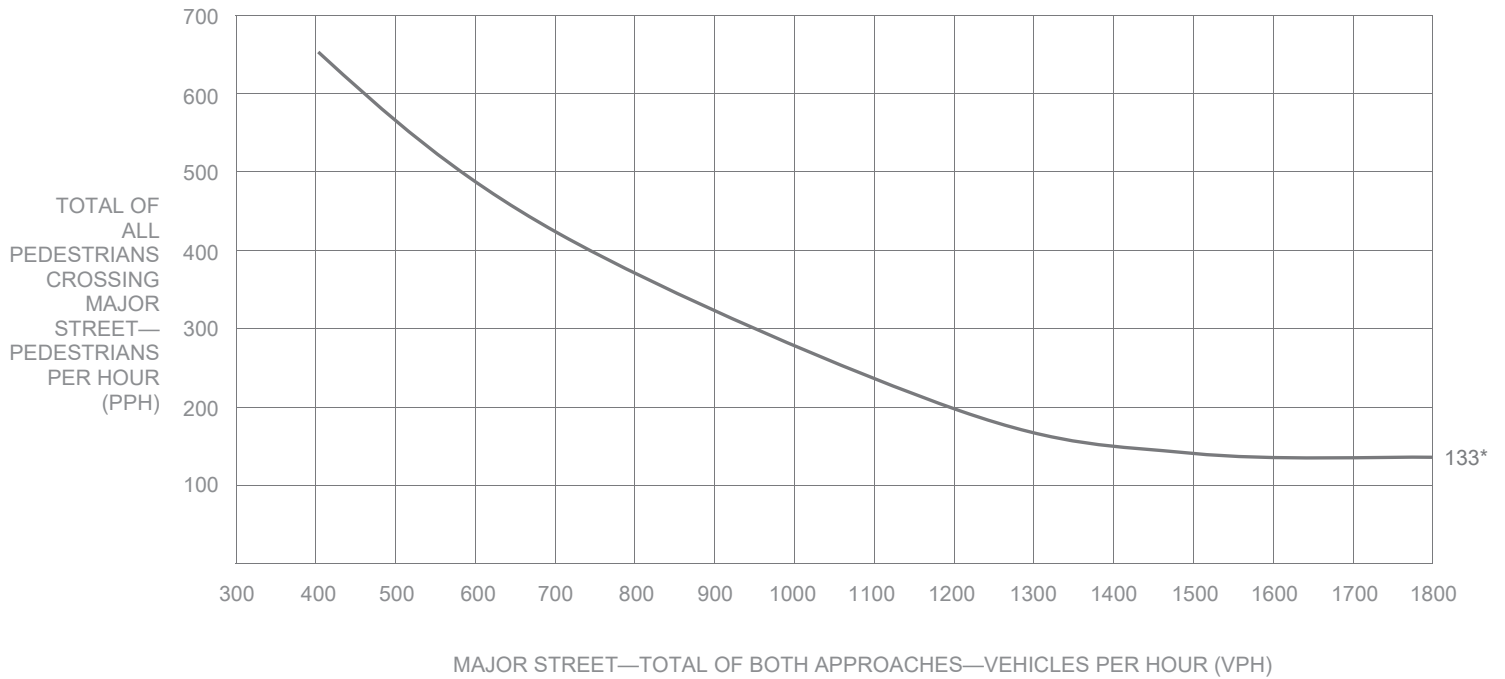


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

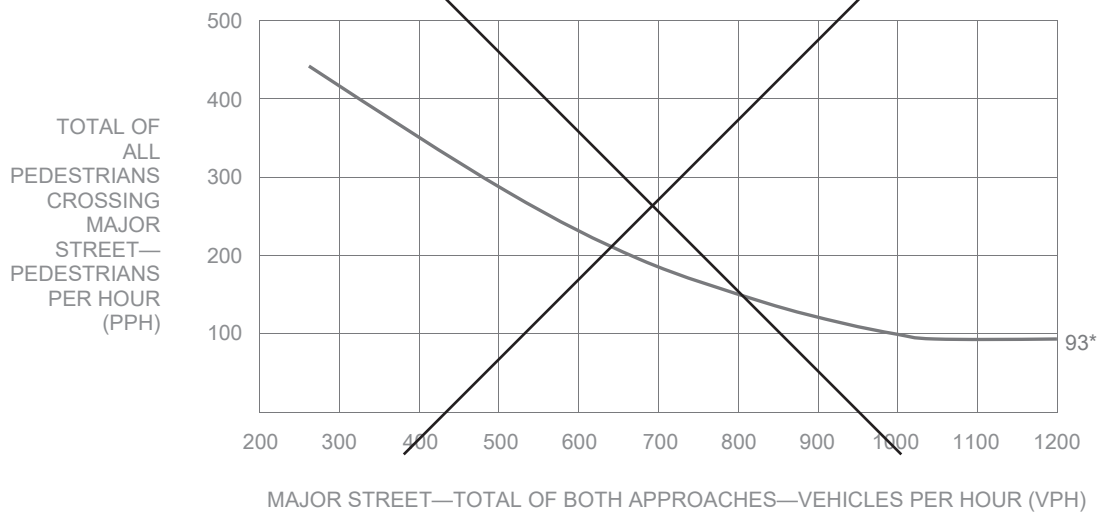
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div> </td> <td style="width: 20%;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-left: 10px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>												
School Age Pedestrians Crossing Street / hr													
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

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 traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

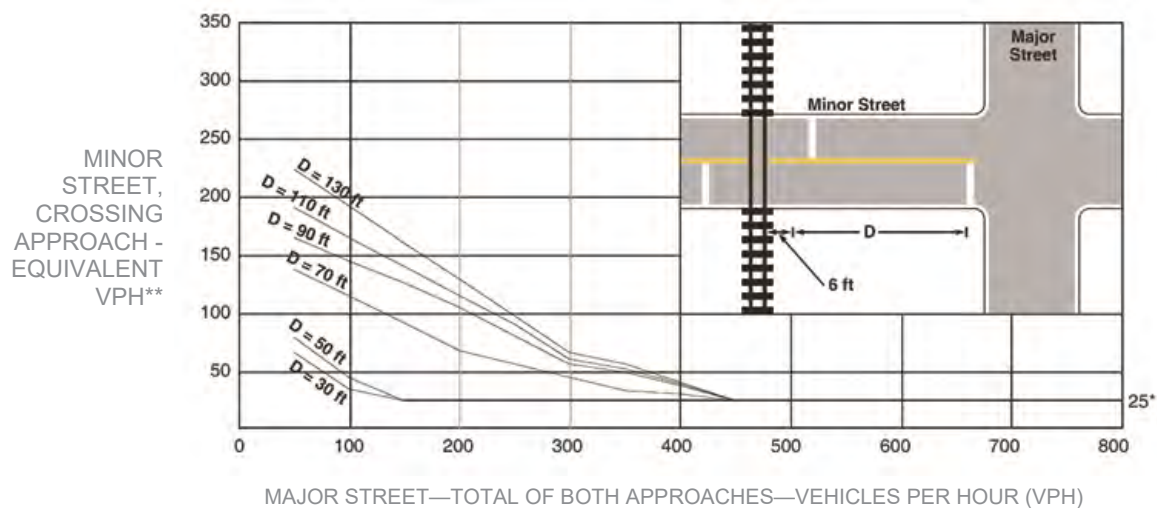
Intersection Near a Grade Crossing *(continued)*

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

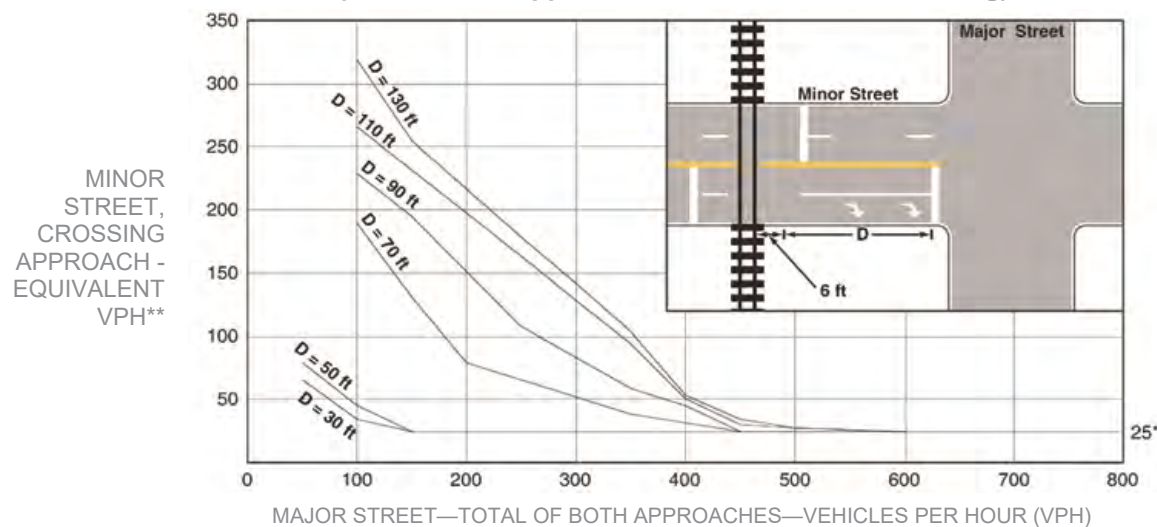
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
AND				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
OR GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

LADOT

Traffic Signal Warrants Worksheet

DATE11/30/17PREPARERGTCREVIEWER

MAJOR ST:Gower Street

MINOR ST:Yucca Street

Critical Approach Speed

MPH

or

Speed Limit

MPH35

or

RURAL (R)

☒ URBAN (U)

Speed limit or critical speed on major street traffic > 40 mph

In built up area of isolated community of < 10,000 population

Eight-Hour Vehicular Volume

WARRANT1

N/A☒

SATISFIED YES☐

NO☐

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

a. Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.

b. A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.

c. In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.

d. 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.

e. Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.

f. 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. This 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. 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.

g. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

(rev. July 2014)

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input type="checkbox"/> _____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More										
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1424	05:00							
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	44								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input type="checkbox"/> _____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More										
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1424	05:00							
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	44								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A	<input type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

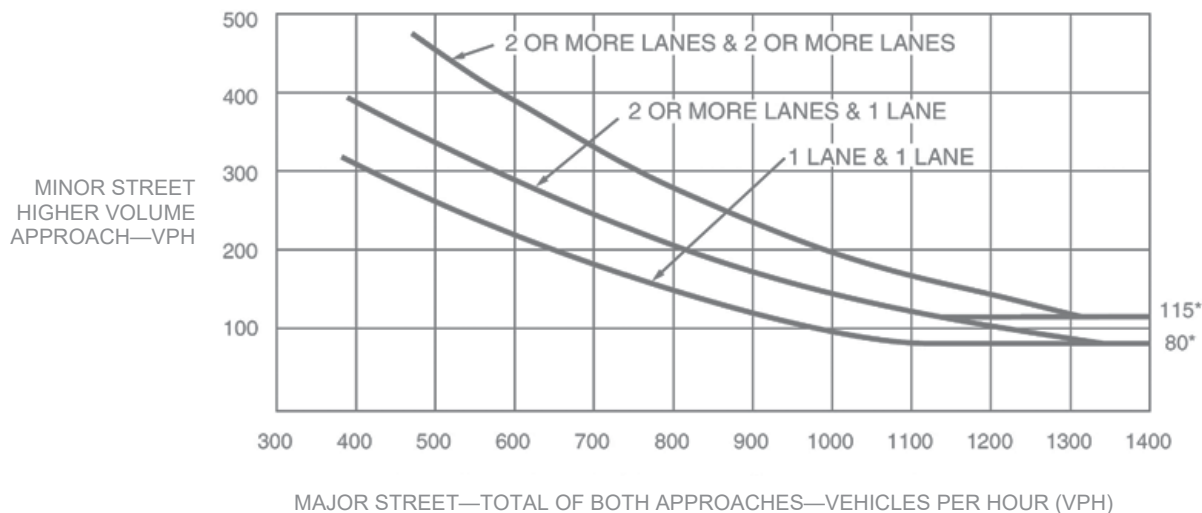
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	1424				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		44				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

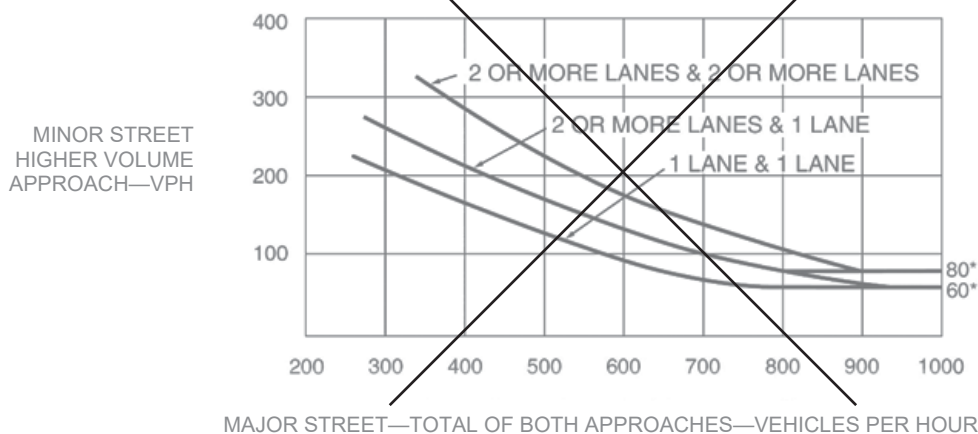
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>

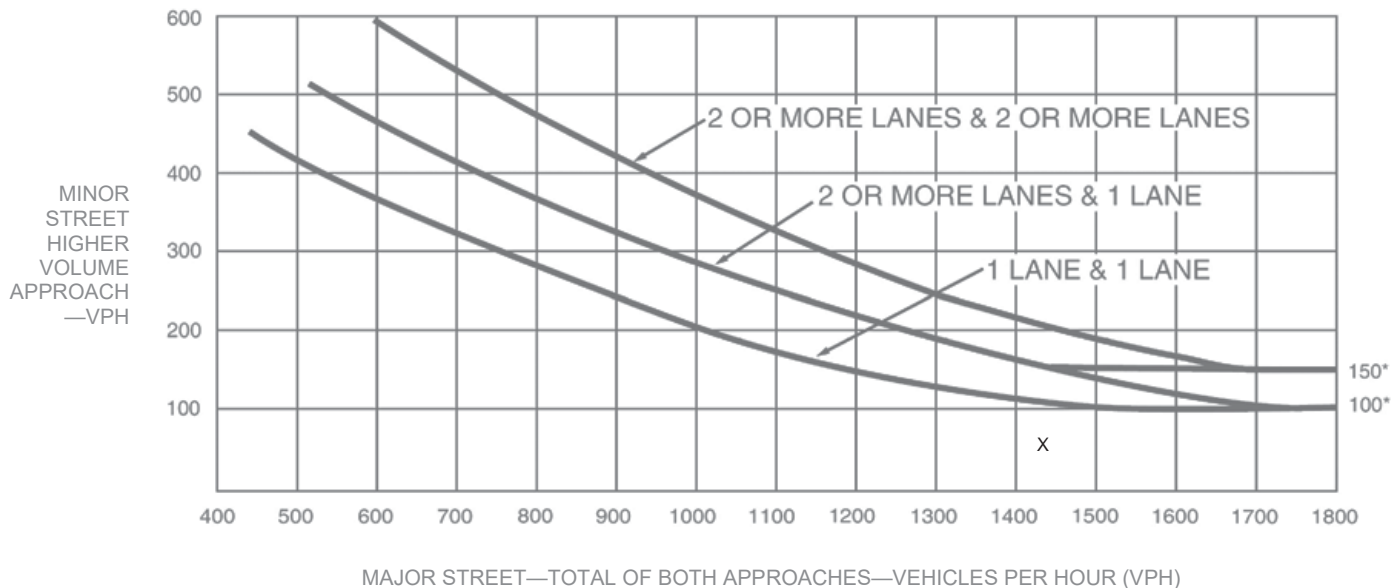
APPROACH LANES	One	2 or More	Hour	
Both Approaches - Major Street		✓	5:00 1424	
Higher Approach - Minor Street	✓		44	

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Peak Hour (continued)

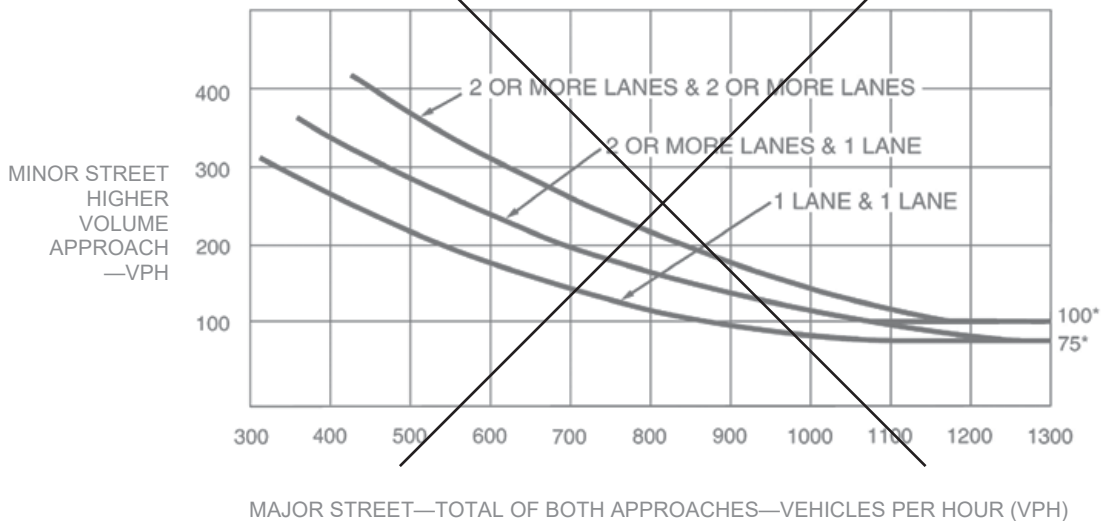
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

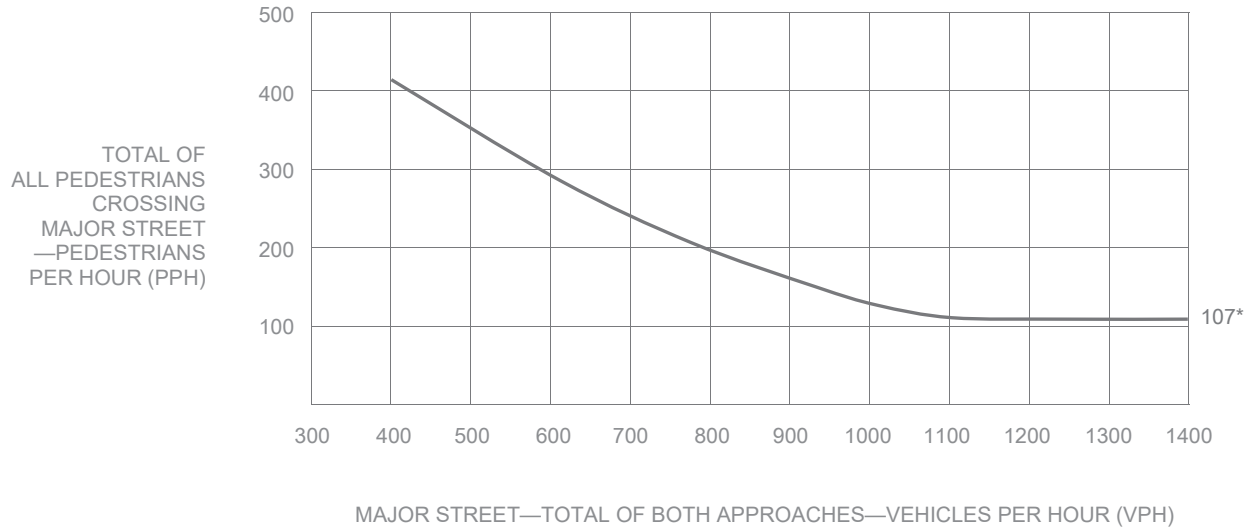
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

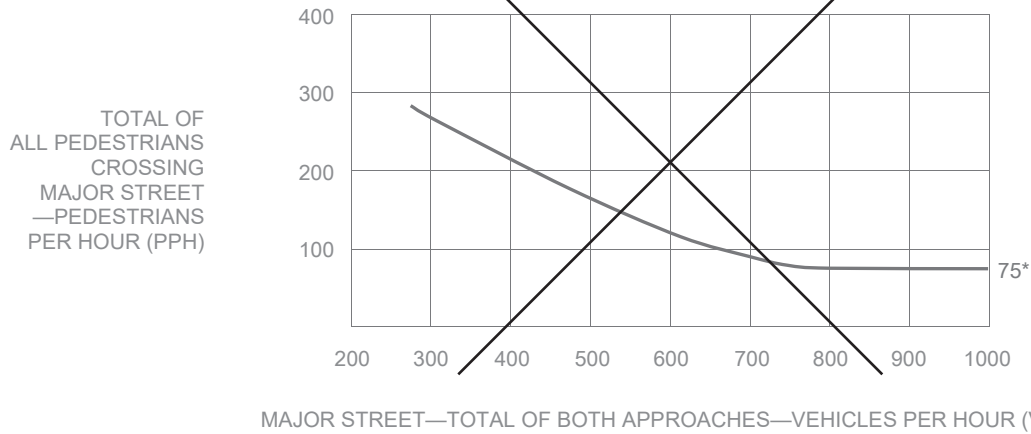
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

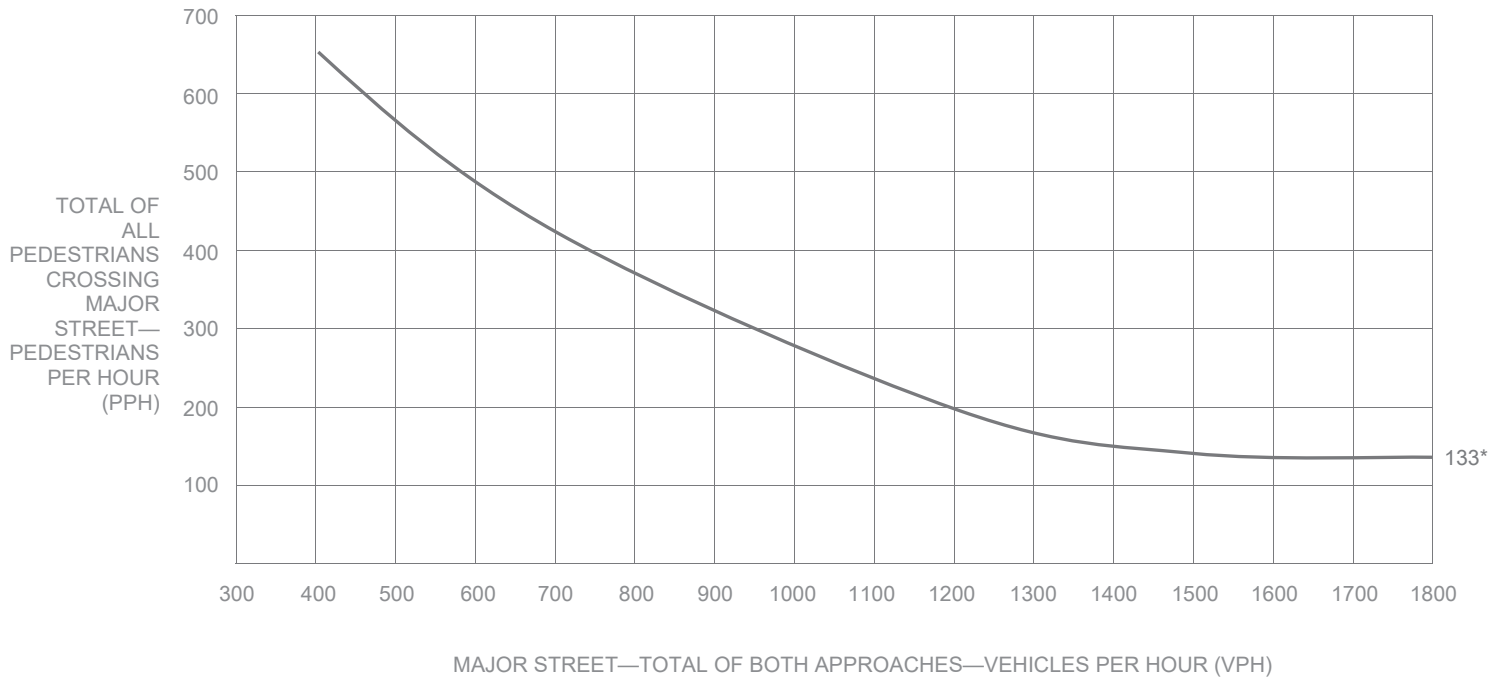


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

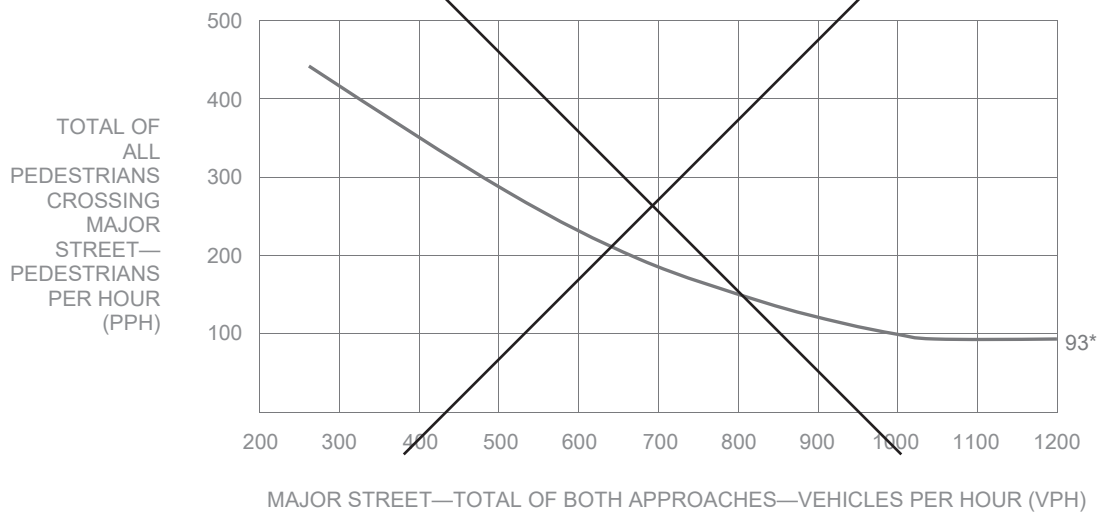
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED		YES	NO
						<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-between;"> <div>Gap / Minutes and # of Children</div> <div>Hour</div> </div>				<div style="display: flex; justify-content: space-between;"> <div>YES</div> <div>NO</div> </div>			
Gaps vs Minutes	Minutes Children Using Crossing		Gaps < Minutes	<input type="checkbox"/>	<input type="checkbox"/>		
	Number of Adequate Gaps		<u>AND</u> Children ≥ 20/hr	<input type="checkbox"/>	<input type="checkbox"/>		
School Age Pedestrians Crossing Street / hr							
<u>AND</u> , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>		

PART B		SATISFIED		YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-between;"> <div></div> <div>YES</div> <div>NO</div> </div>					
The distance to the nearest traffic signal along the major street is greater than 300 ft		<input type="checkbox"/>	<input type="checkbox"/>		
<u>OR</u> , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

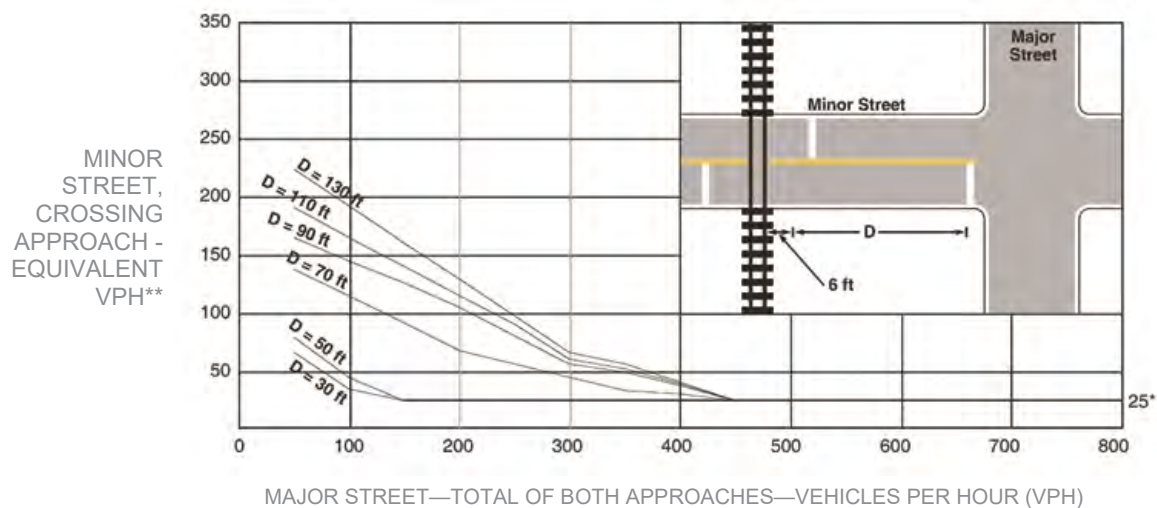
Intersection Near a Grade Crossing *(continued)*

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

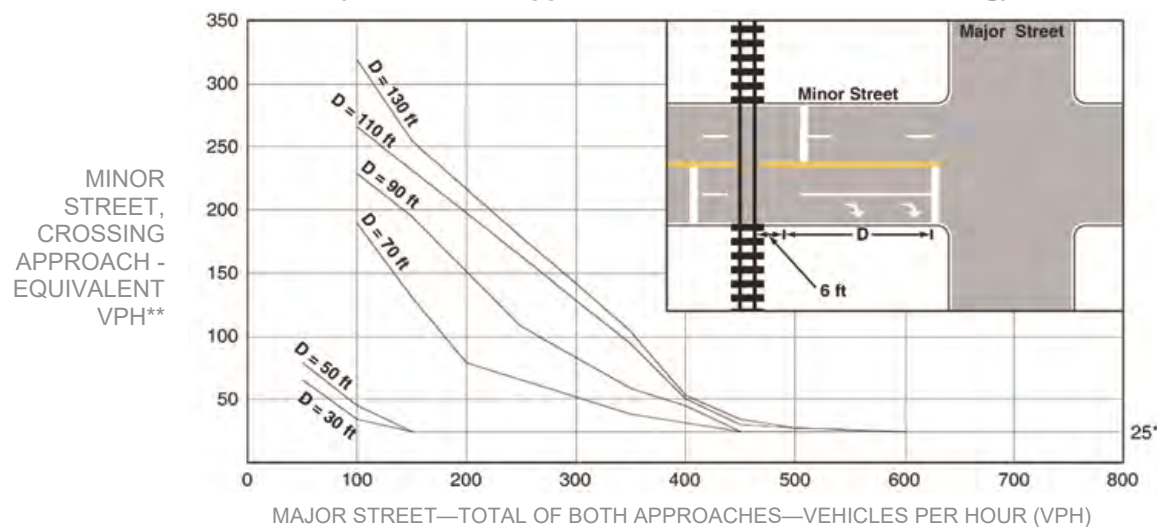
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

Traffic Signal Warrants Worksheet

 DATE 11/30/17 PREPARER GTC REVIEWER _____

 MAJOR ST: Gower Street

 MINOR ST: Yucca Street

 Critical Approach Speed } or Speed Limit }

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

Eight-Hour Vehicular Volume


 N/A ☒
 SATISFIED YES ☐
 NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume (continued)

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> _____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More										
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1438	05:00							
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	44								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> _____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More										
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1438	05:00							
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	44								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	2 or More.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	1.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	2 or More.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	1.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

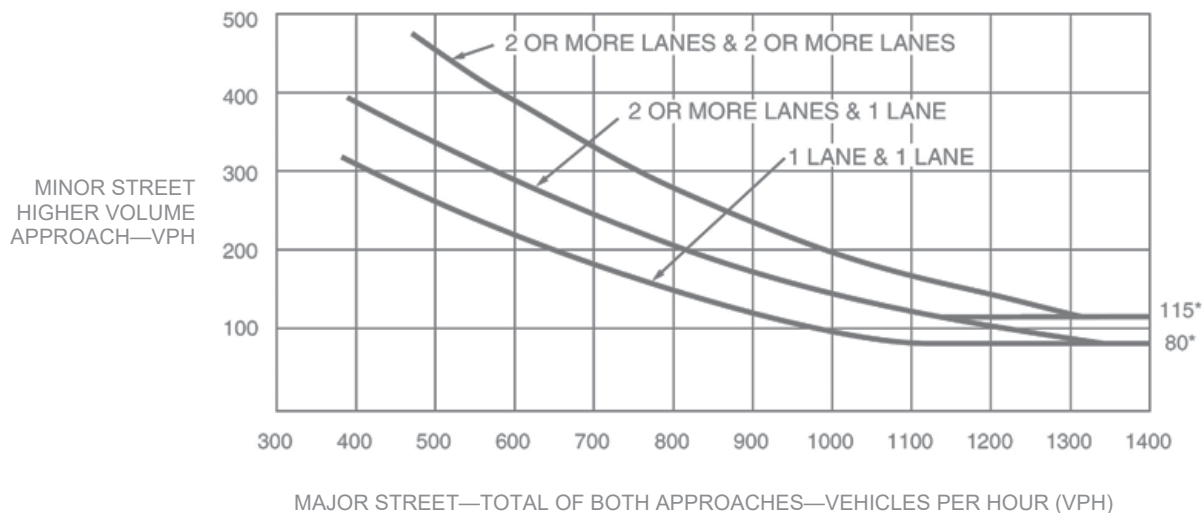
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	1438				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		44				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

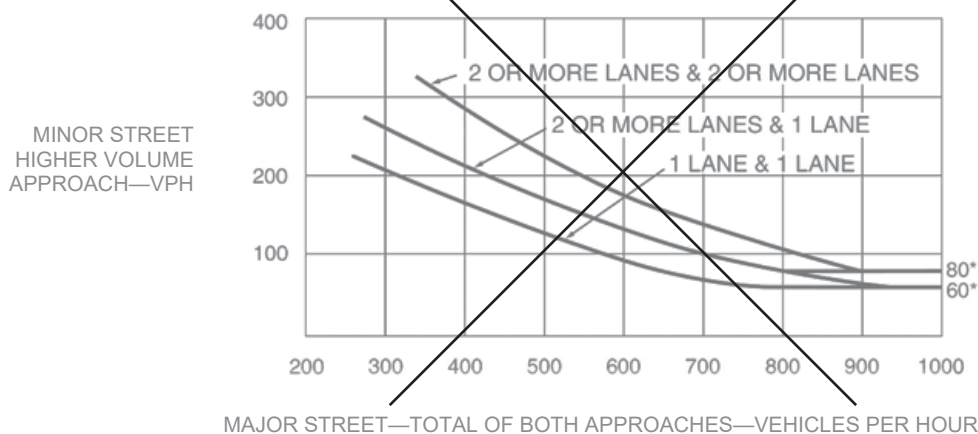
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT

3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	YES	NO	N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

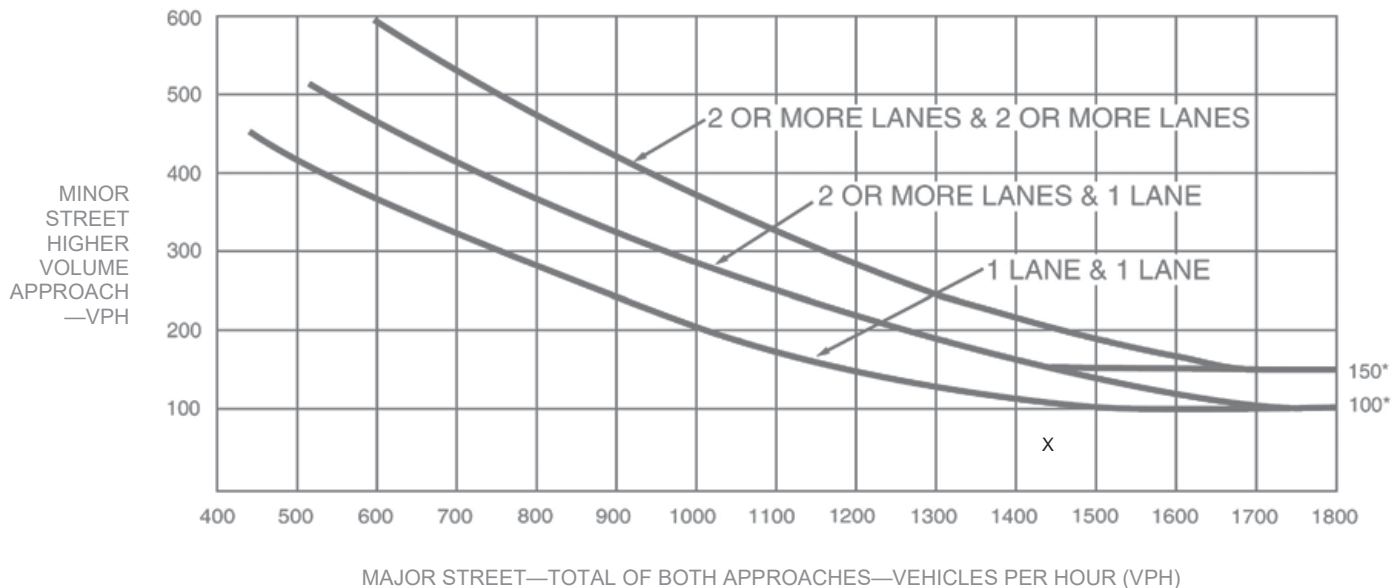
			Hour
APPROACH LANES	One	2 or More	5:00
Both Approaches - Major Street		✓	1438
Higher Approach - Minor Street	✓		44

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)		

Peak Hour (continued)

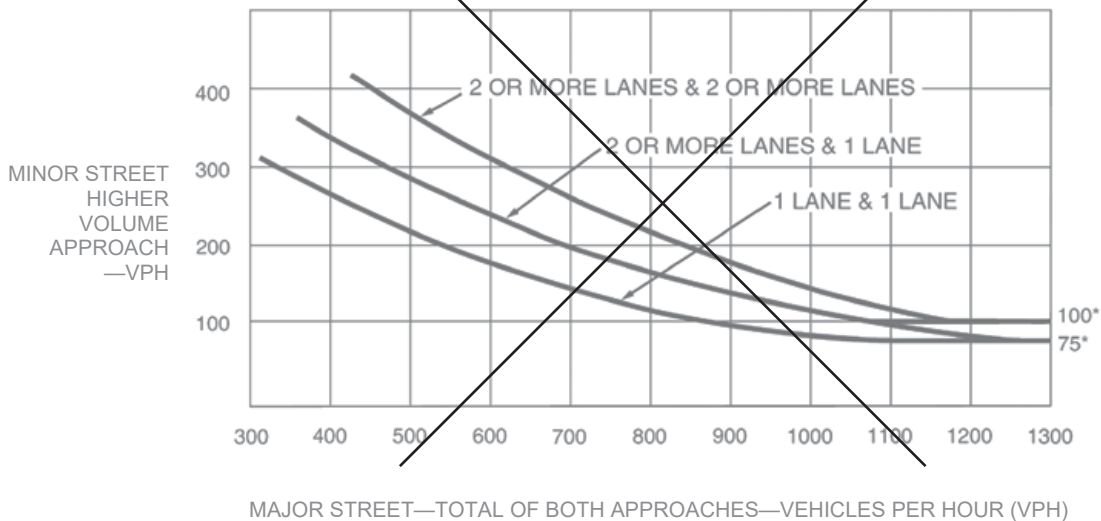
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED YES NO
☐ ☐

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

PART 2

SATISFIED YES NO
☐ ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

YES NO
☐ ☐

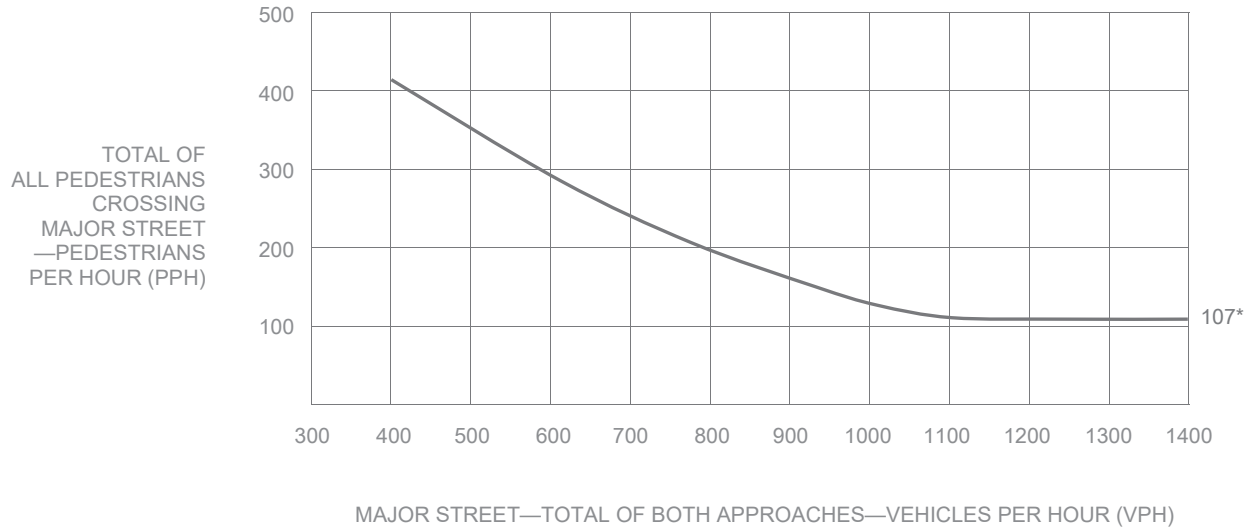
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

☐ ☐

Pedestrian Volume *(continued)*

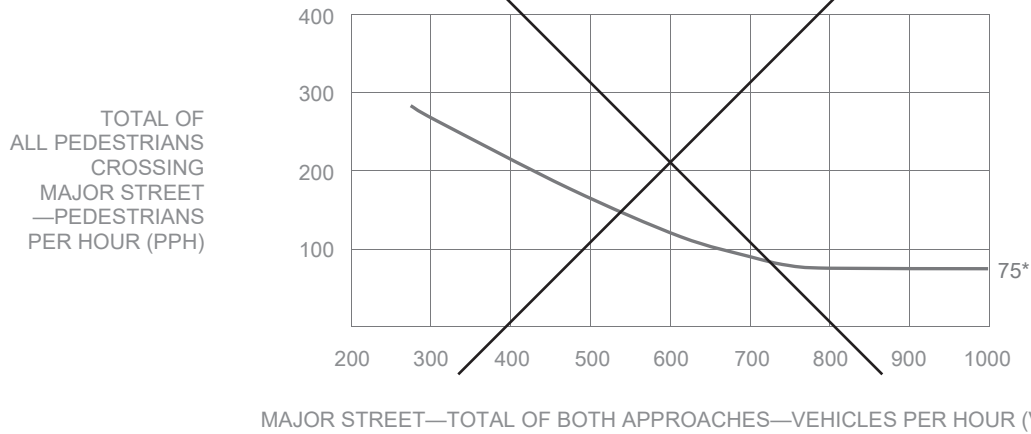
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

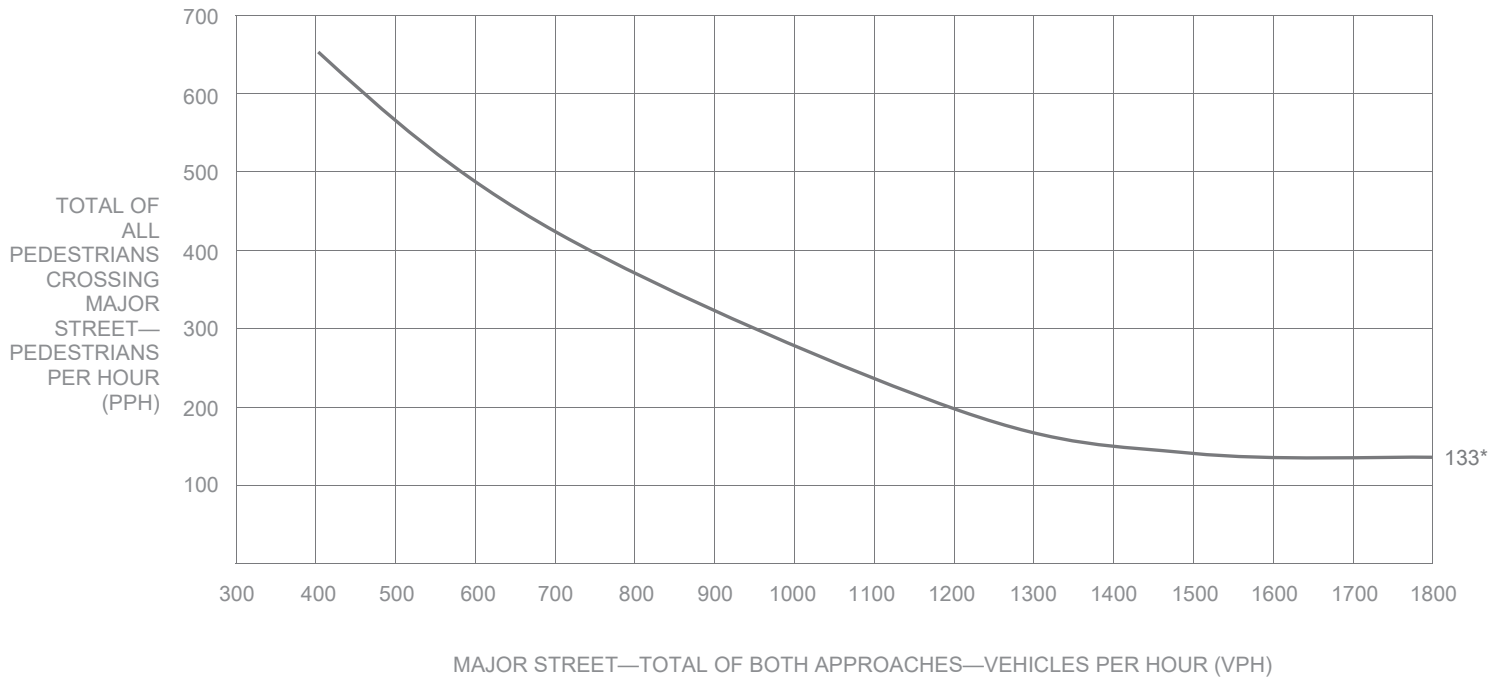


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

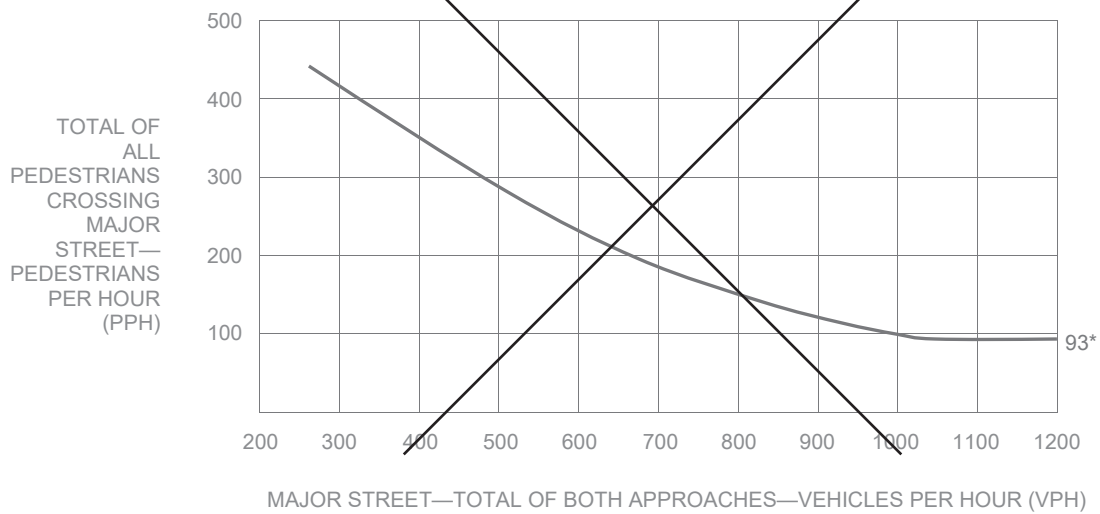
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED		YES	NO
						<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-between;"> <div> Gap / Minutes and # of Children </div> <div style="border: 1px solid black; padding: 2px;">Hour</div> </div>				<div style="display: flex; justify-content: space-around;"> YES NO </div>			
Gaps vs Minutes	Minutes Children Using Crossing		Gaps < Minutes		<input type="checkbox"/>	<input type="checkbox"/>	
	Number of Adequate Gaps		<u>AND</u> Children ≥ 20/hr		<input type="checkbox"/>	<input type="checkbox"/>	
School Age Pedestrians Crossing Street / hr							
<u>AND</u> , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>		

PART B		SATISFIED		YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-around;"> YES NO </div>					
The distance to the nearest traffic signal along the major street is greater than 300 ft		<input type="checkbox"/>	<input type="checkbox"/>		
<u>OR</u> , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , 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.			

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

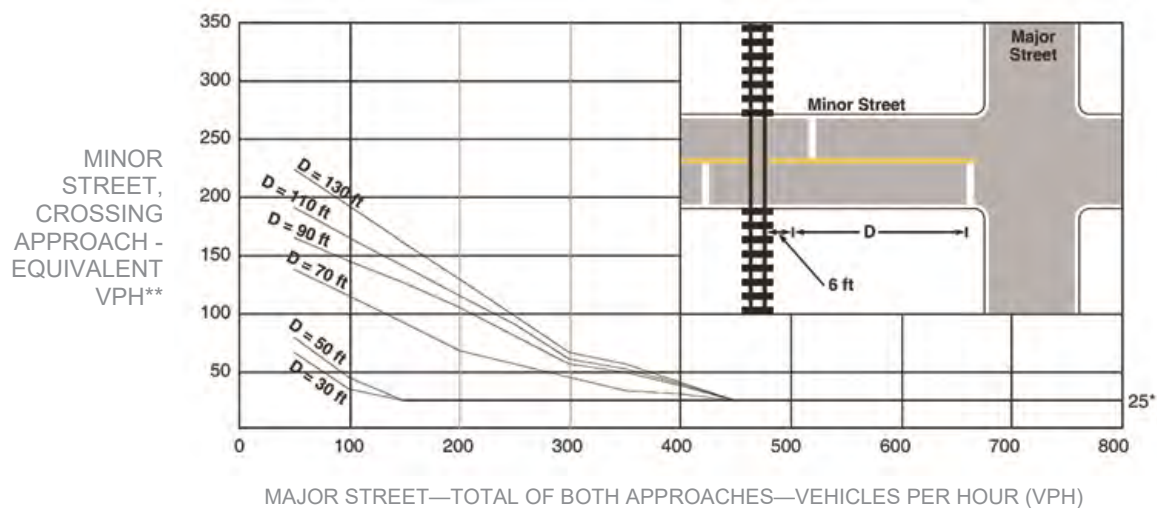
Intersection Near a Grade Crossing *(continued)*

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

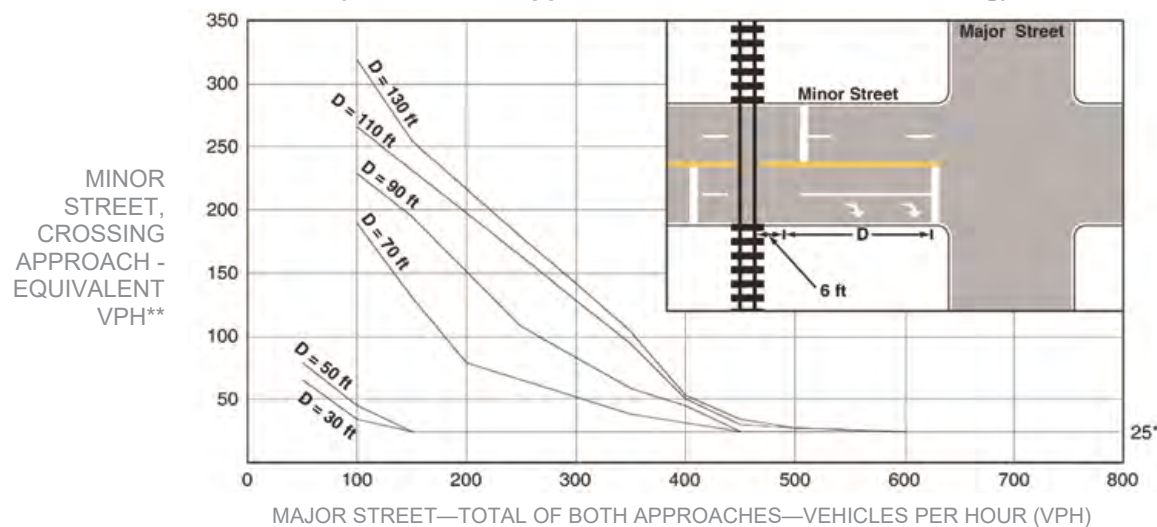
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
AND				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
OR GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.


PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: Yucca Street

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- b. A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- c. In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- d. 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.
- e. Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- f. 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. This 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. 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.
- g. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1716								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	47								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
APPROACH LANES	U	R	U	R									
	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1716								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	47								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND		<input type="checkbox"/>	<input type="checkbox"/>
	B. INTERRUPTION OF CONTINUOUS TRAFFIC			
	AND			
AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

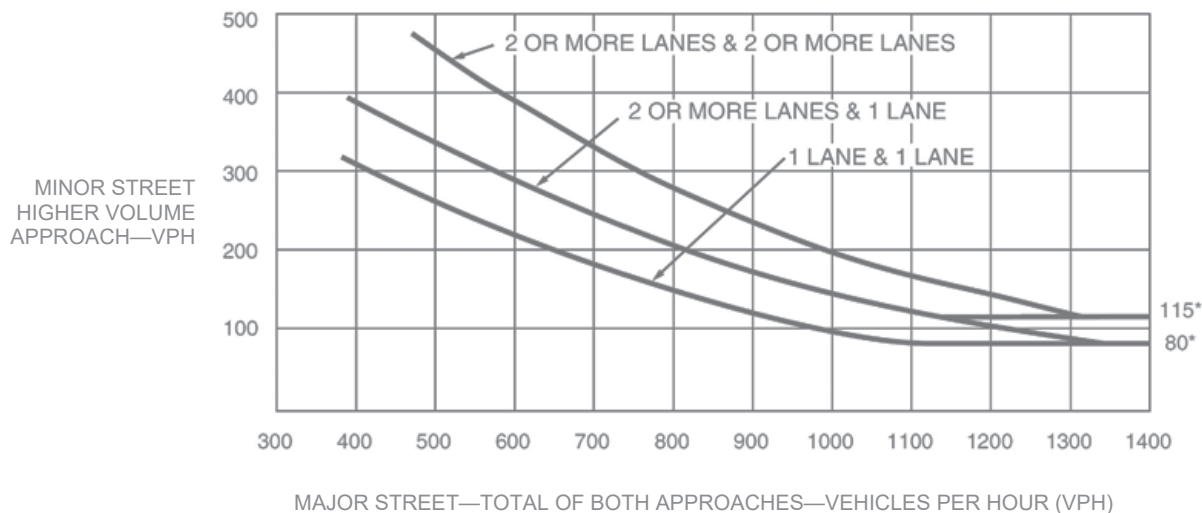
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	1716				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		47				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

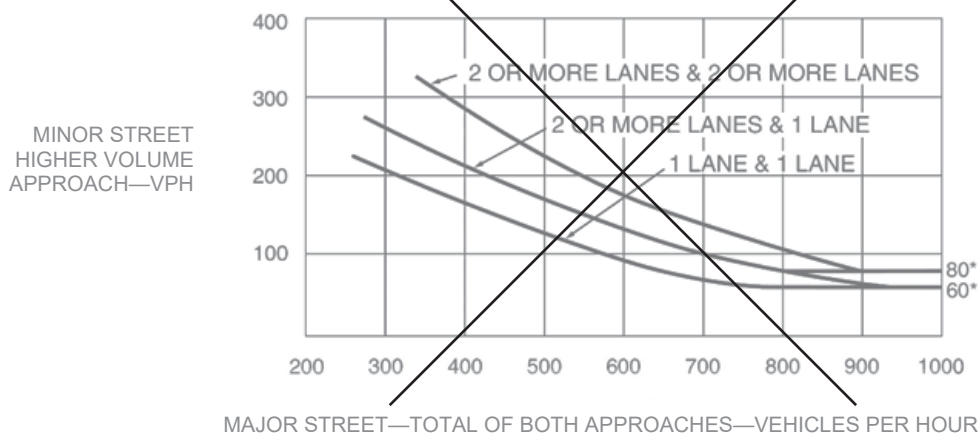
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	YES	NO	N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

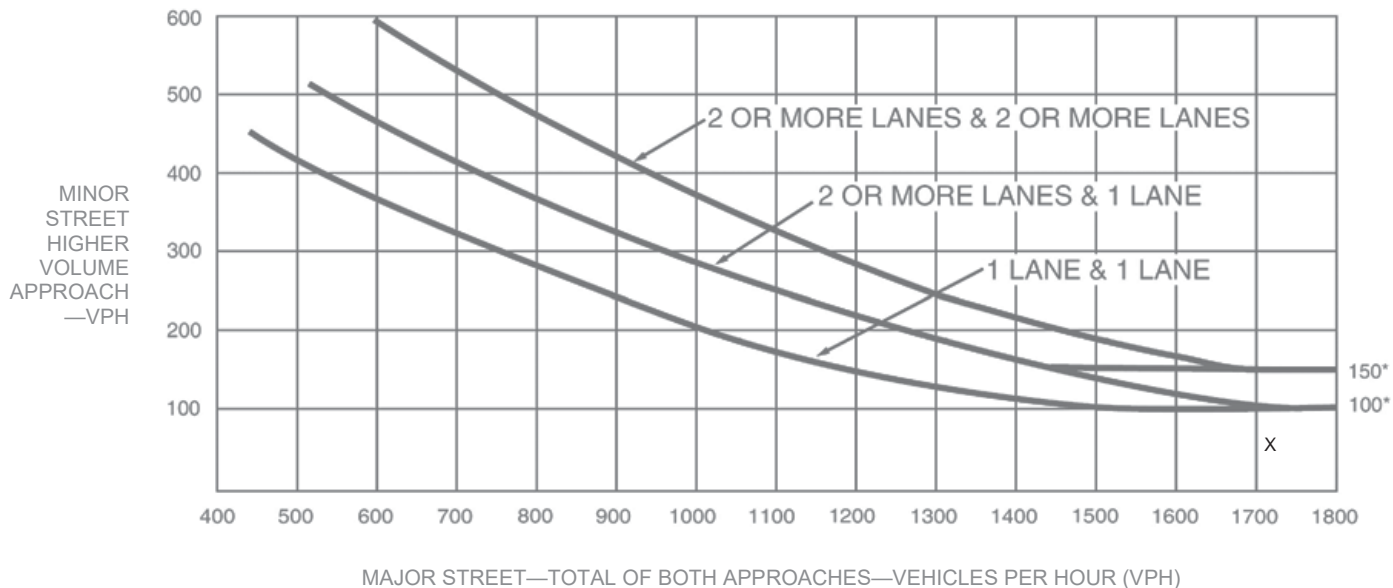
			Hour
APPROACH LANES	One	2 or More	5:00
Both Approaches - Major Street		✓	1716
Higher Approach - Minor Street	✓		47

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)		

Peak Hour (continued)

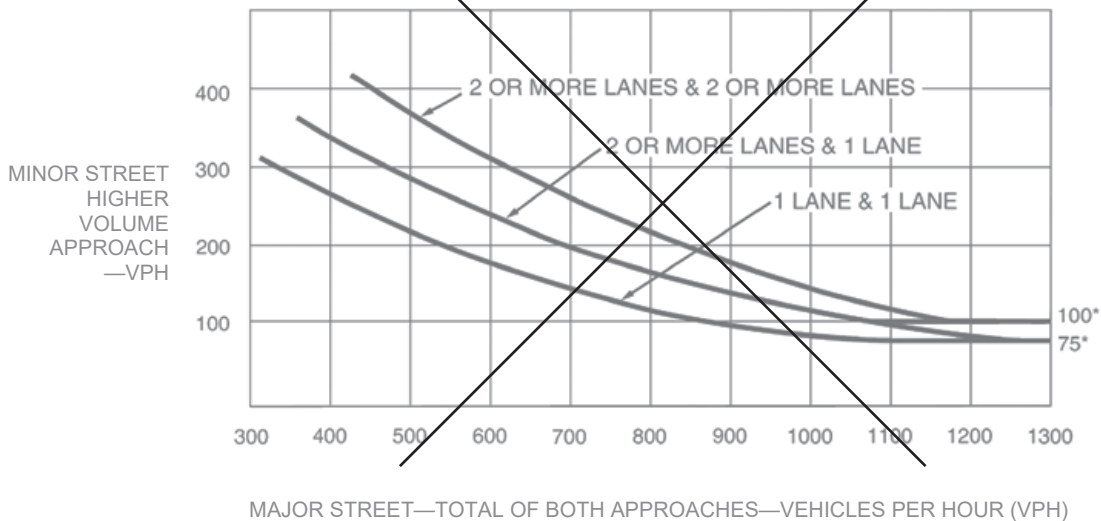
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

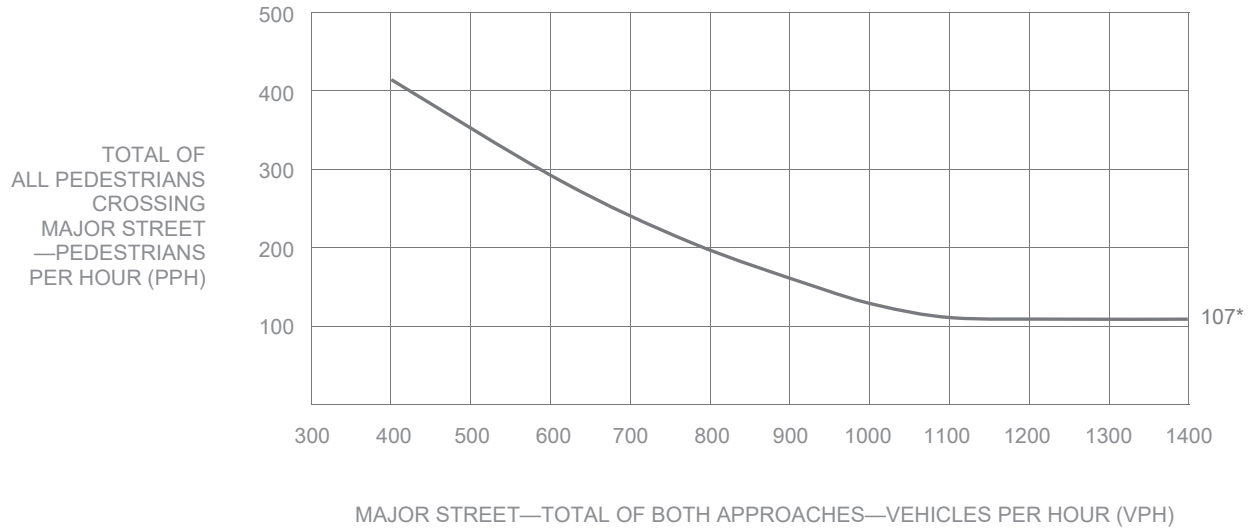
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

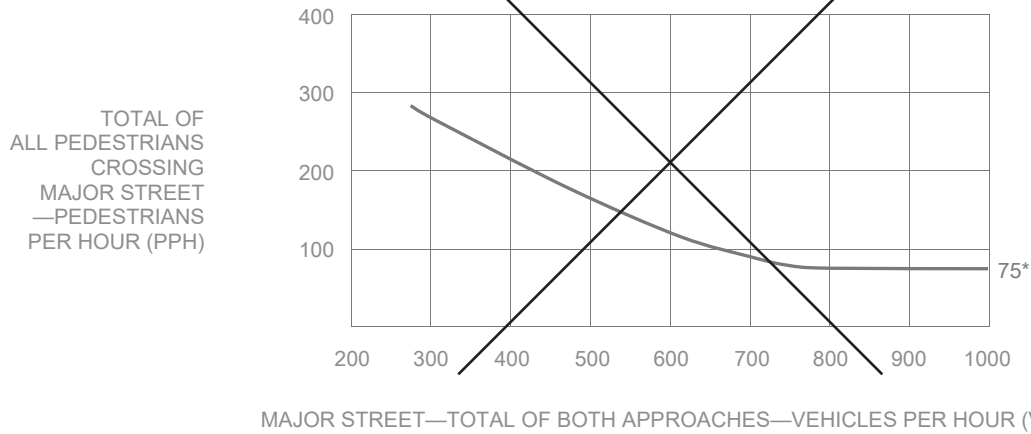
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

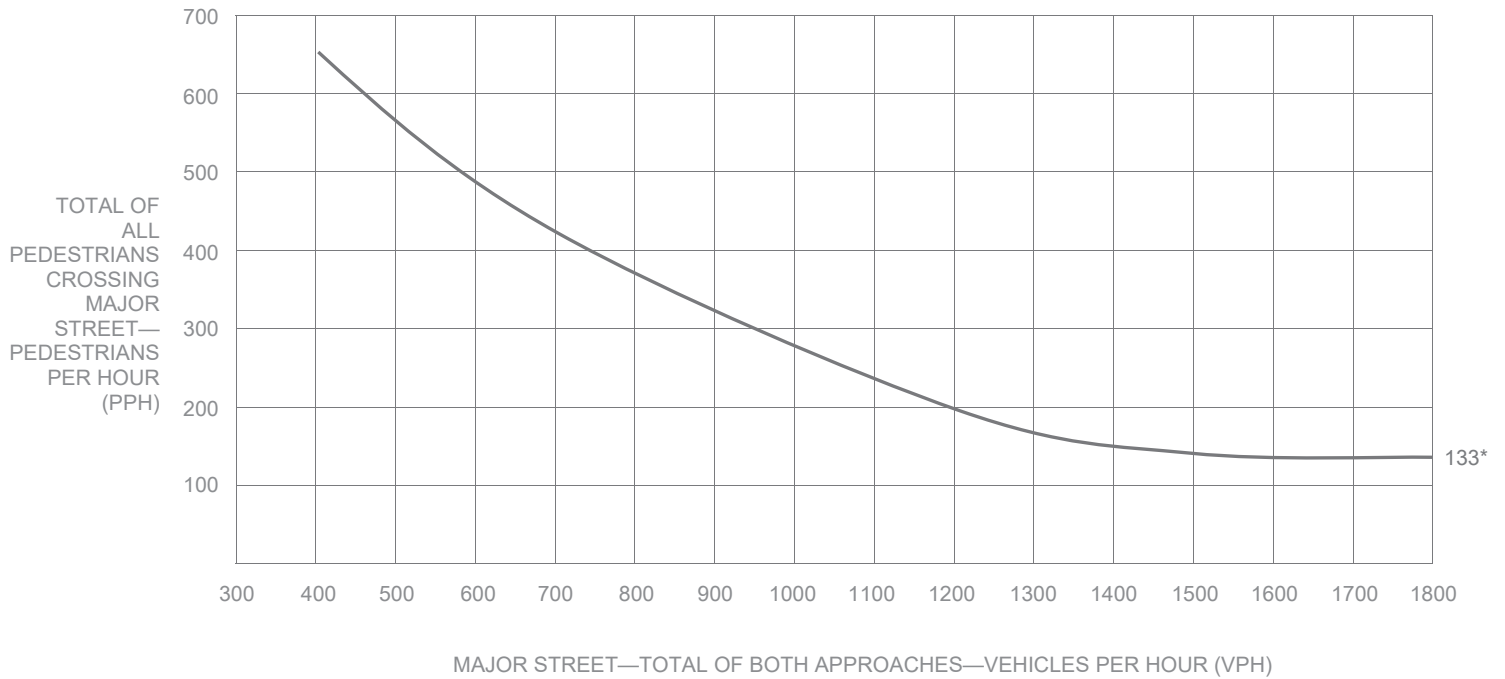


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

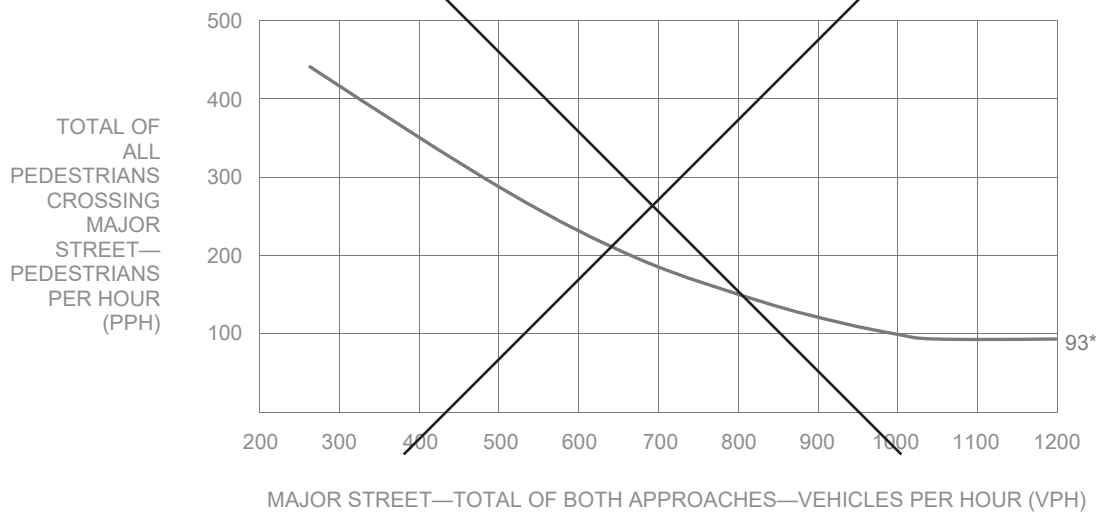
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED		YES	NO												
						<input type="checkbox"/>	<input type="checkbox"/>												
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 5px;">Gap / Minutes and # of Children</th> <th style="text-align: center; padding: 5px;">Hour</th> </tr> </thead> <tbody> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 45%; padding: 5px;">Minutes Children Using Crossing</td> <td style="width: 40%;"></td> </tr> <tr> <td></td> <td style="padding: 5px;">Number of Adequate Gaps</td> <td></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> <td></td> </tr> </tbody> </table> </div> <div style="width: 35%; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gap / Minutes and # of Children		Hour	Gaps vs Minutes	Minutes Children Using Crossing			Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO		
Gap / Minutes and # of Children		Hour																	
Gaps vs Minutes	Minutes Children Using Crossing																		
	Number of Adequate Gaps																		
School Age Pedestrians Crossing Street / hr																			
				<input type="checkbox"/>	<input type="checkbox"/>														
				<input type="checkbox"/>	<input type="checkbox"/>														
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>														

PART B		SATISFIED		YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		<input checked="" type="checkbox"/>	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

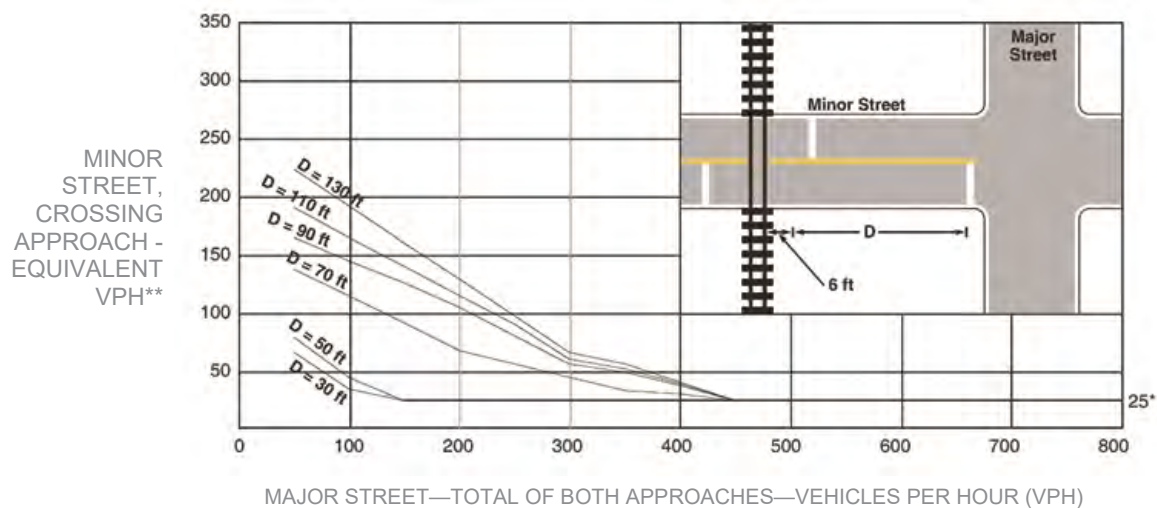
Intersection Near a Grade Crossing *(continued)*

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

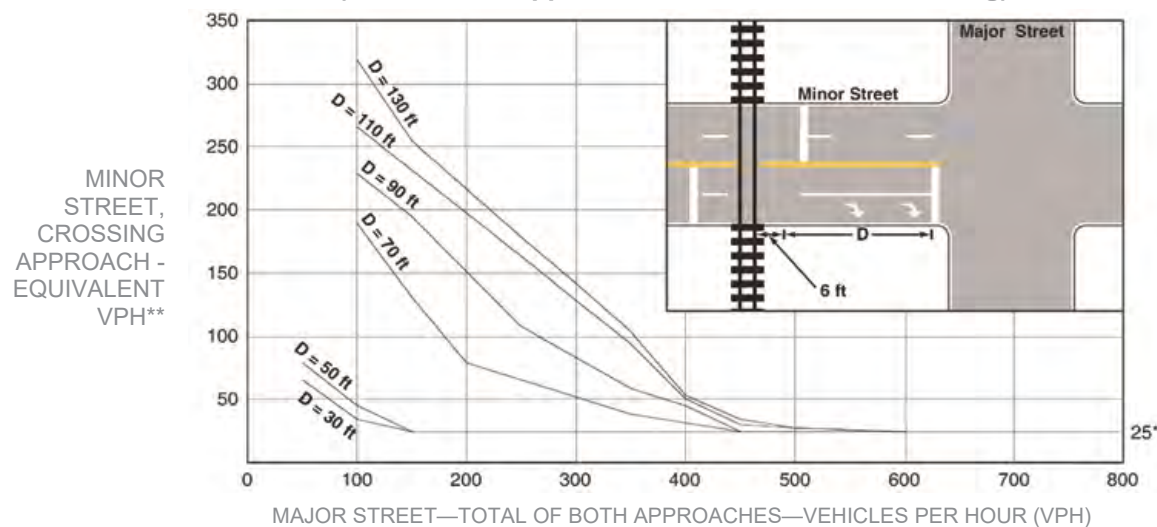
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
AND				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
OR GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

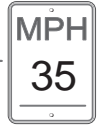
- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____MAJOR ST: Gower StreetMINOR ST: Yucca StreetCritical
Approach
Speed

or

Speed
Limit

Speed limit or critical speed on major street traffic > 40 mph..... ☐ or ☐ } RURAL (R) ☒ URBAN (U)

In built up area of isolated community of < 10,000 population..... ☐

Eight-Hour Vehicular Volume

N/A ☒SATISFIED YES ☐NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume (continued)

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	05:00								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	1730								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	05:00								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	1730								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume *(continued)*

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

N/A

Projected Volumes

SATISFIED

YES NO

Page 10 of 10

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see *Note**

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street						
1.....	1.....			8,000	5,600	2,400	1,680
2 or More.....	1.....			9,600	6,720	2,400	1,680
2 or More.....	2 or More.....			9,600	6,720	3,200	2,240
1.....	2 or More.....			8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street						
1.....	1.....			12,000	8,400	1,200	850
2 or More.....	1.....			14,400	10,080	1,200	850
2 or More.....	2 or More.....			14,400	10,080	1,600	1,120
1.....	2 or More.....			12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions							
fulfilled 80% or more..... <u> </u> <u> </u> <div style="display: flex; justify-content: space-around; width: 100%;"> A B </div>							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

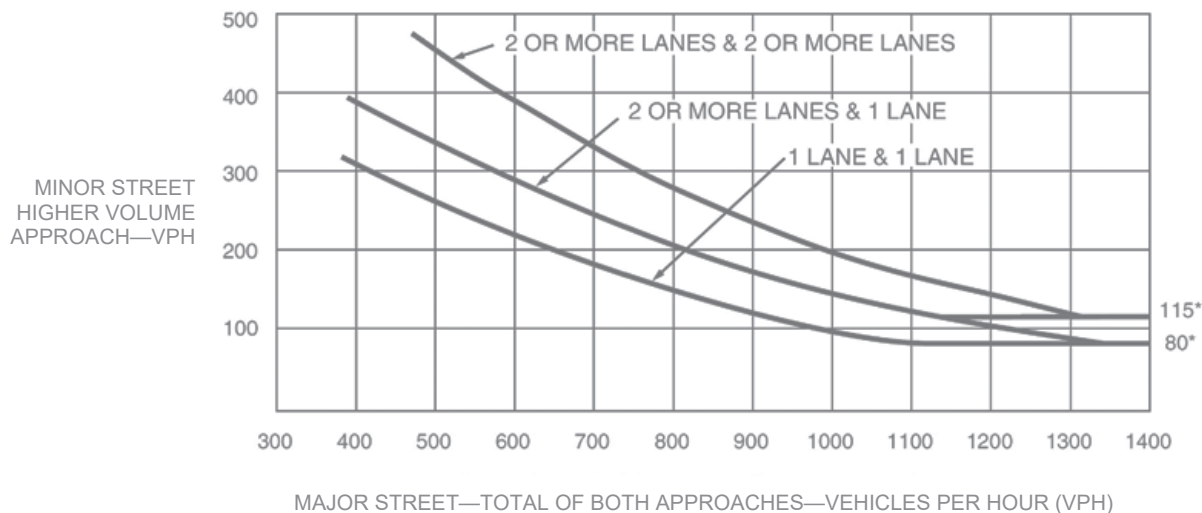
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	1730				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		47				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

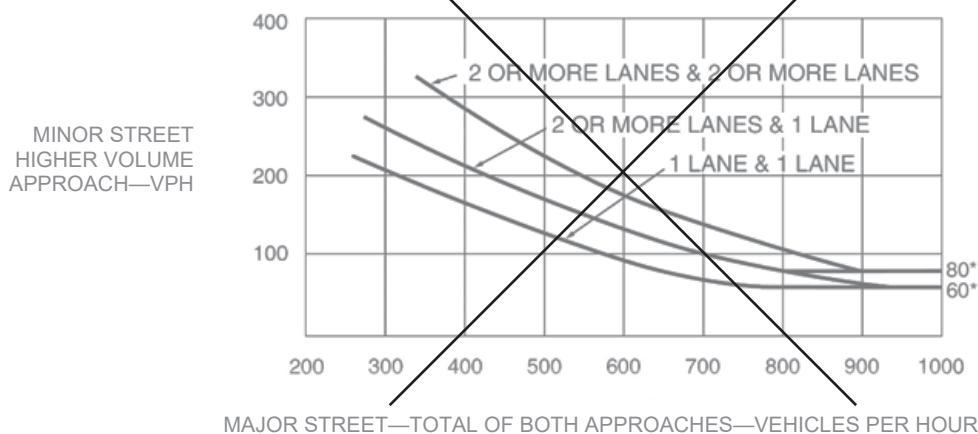
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>

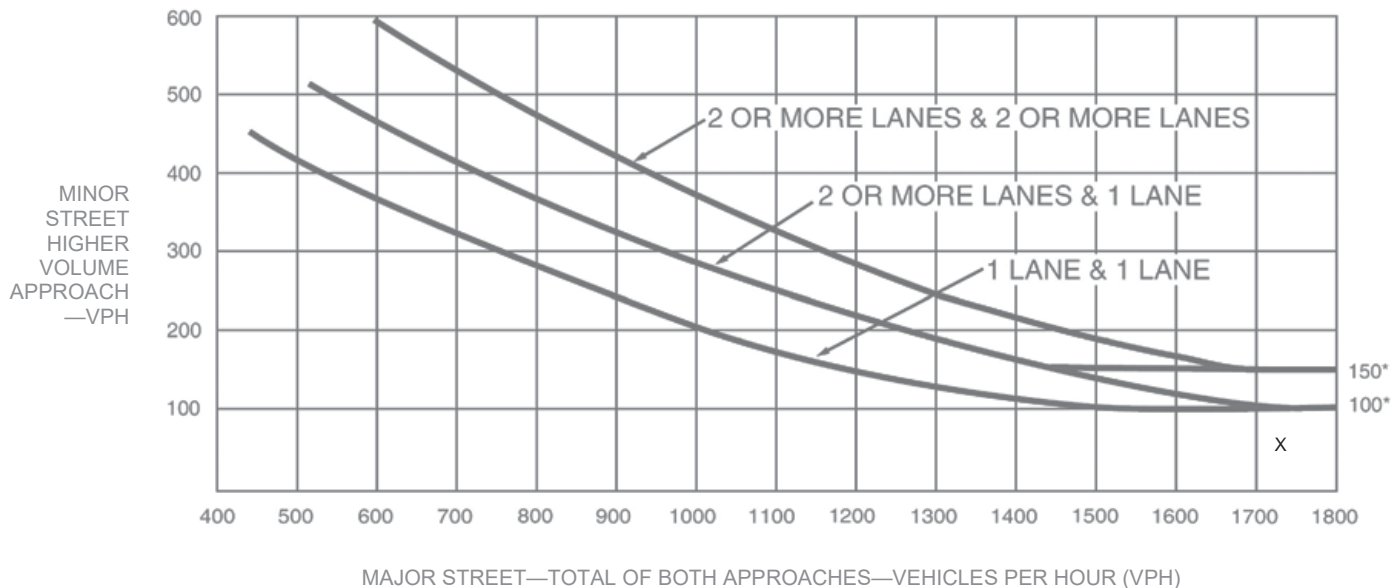
APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		✓	5:00 1730
Higher Approach - Minor Street	✓		47

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)		

Peak Hour (continued)

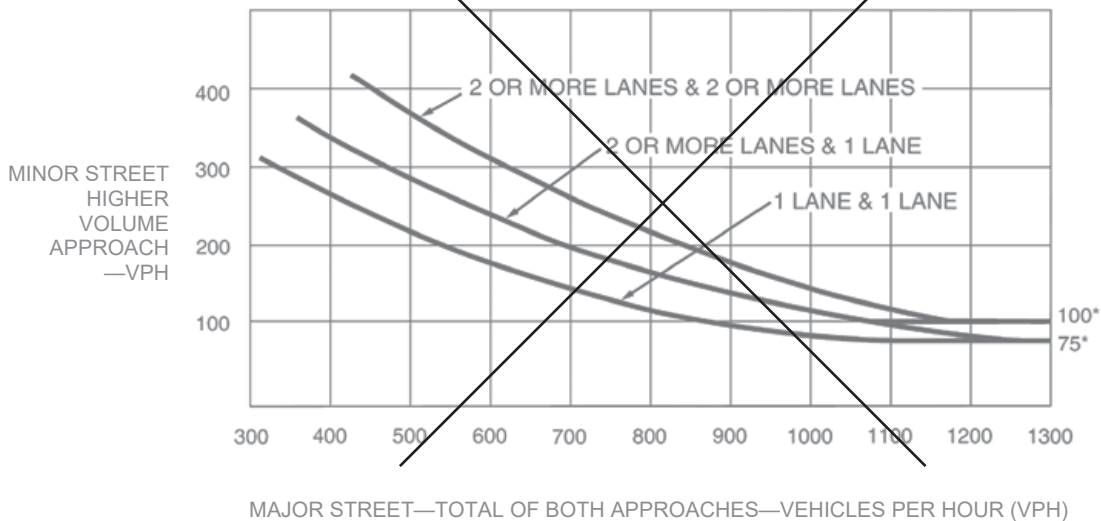
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

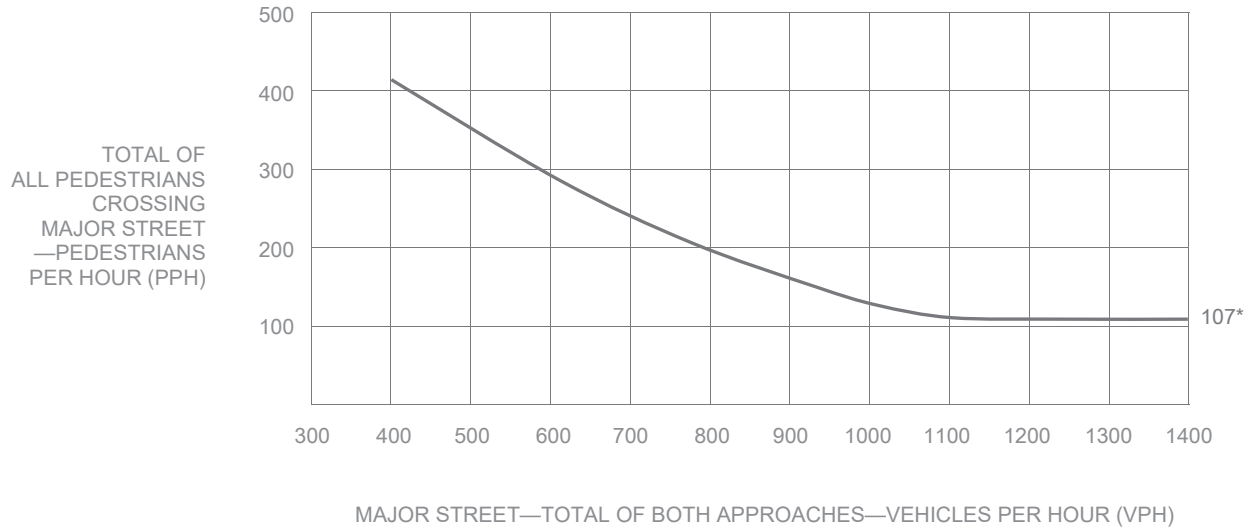
	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH

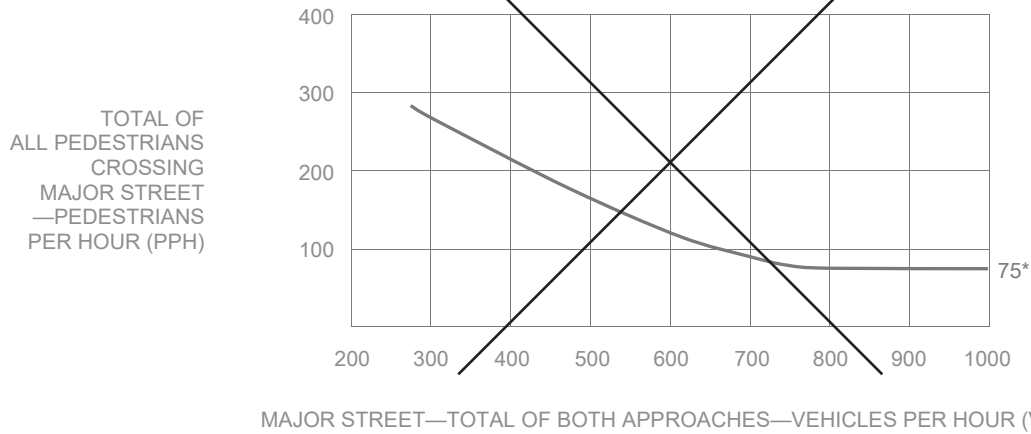
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH

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

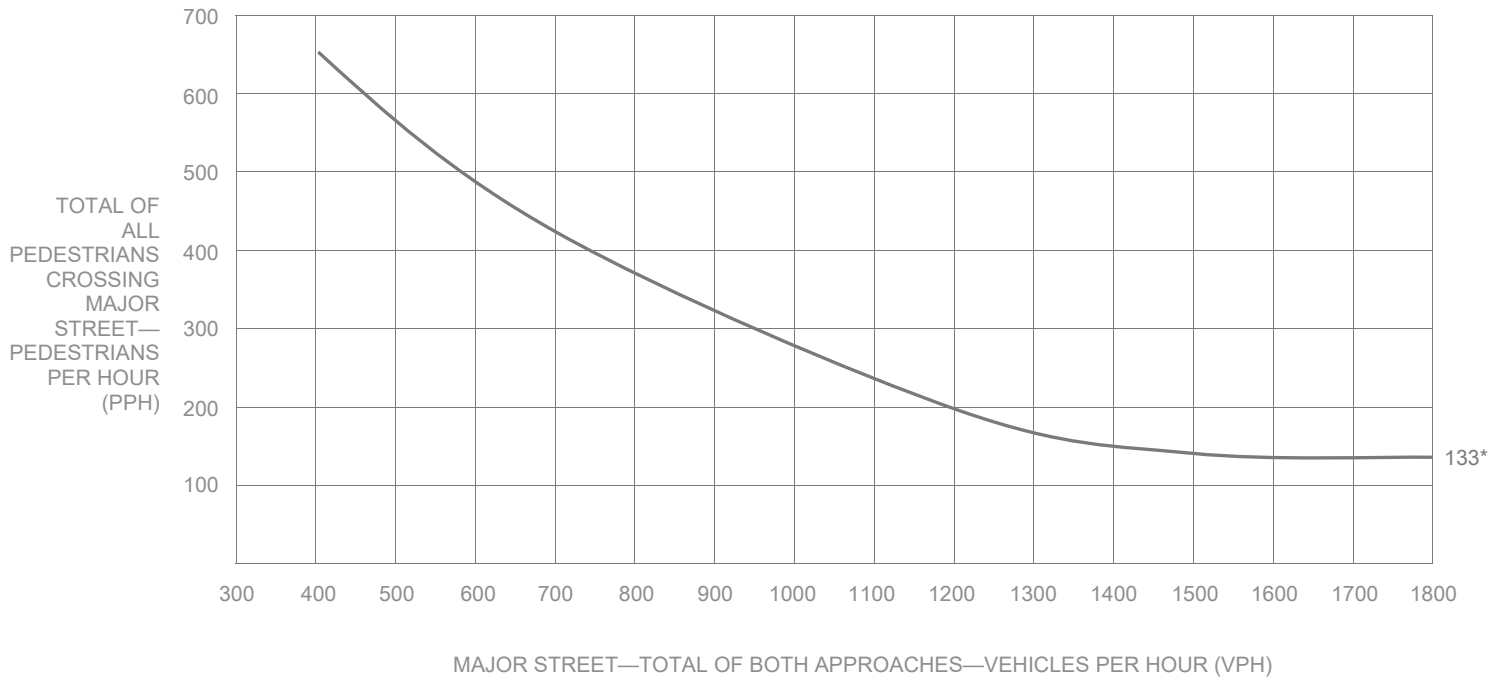


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

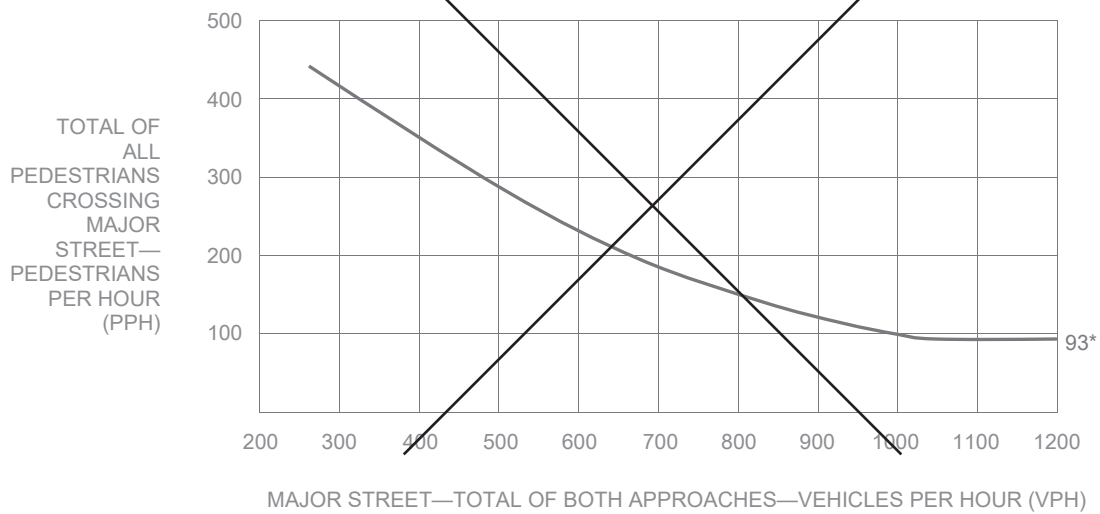
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED		YES	NO
						<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-between;"> <div>Gap / Minutes and # of Children</div> <div>Hour</div> </div>				YES NO			
Gaps vs Minutes	Minutes Children Using Crossing			Gaps < Minutes	<input type="checkbox"/>	<input type="checkbox"/>	
	Number of Adequate Gaps			<u>AND</u> Children ≥ 20/hr	<input type="checkbox"/>	<input type="checkbox"/>	
School Age Pedestrians Crossing Street / hr							
<u>AND</u> , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>		

PART B		SATISFIED		YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

			YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency			<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:		<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):			
REQUIREMENTS	CONDITIONS	✓		
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume			
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8			

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

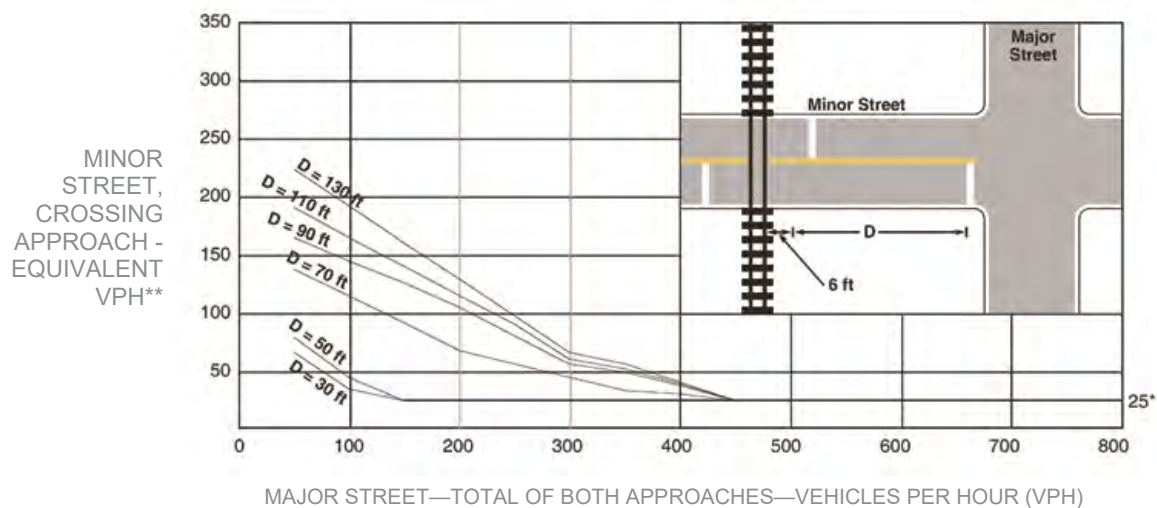
Intersection Near a Grade Crossing *(continued)*

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

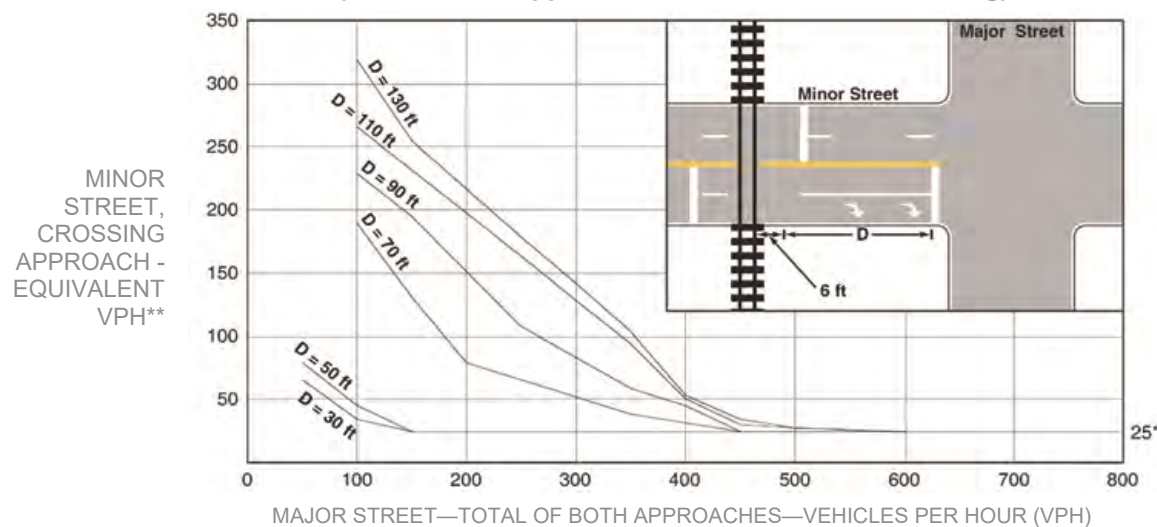
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
AND				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
OR GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____MAJOR ST: Sunset BoulevardMINOR ST: US 101 SB On-Ramp

Critical Approach Speed	}		or	Speed Limit	}	

Speed limit or critical speed on major street traffic > 40 mph.....	<input type="checkbox"/>	} RURAL (R)	<input checked="" type="checkbox"/> URBAN (U)
In built up area of isolated community of < 10,000 population.....	<input type="checkbox"/>		

Eight-Hour Vehicular Volume



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
80%	<input type="checkbox"/>	<input type="checkbox"/>
IN REDUCTION MINOR STREET (fill in percentage)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)				RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> (If Yes, fill in percentage) <input type="checkbox"/> _____%						
		U	R	U	R	Hours						
APPROACH LANES		1		2 or More		05:00						
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	3509							
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	40							

Condition B

Interruption of Continuous Traffic

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
80%	<input type="checkbox"/>	<input type="checkbox"/>
REDUCTION IN MINOR STREET (fill in percentage)	<input type="checkbox"/>	<input type="checkbox"/> _____%

		MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)				RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> (If Yes, fill in percentage)					
		U	R	U	R						
APPROACH LANES	1		2 or More		05:00						
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	3509						
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	40						

COMBINATION OF A & B

SATISFIED	YES	NO
	<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/> No one condition satisfied, but following conditions fulfilled 80% or more..... <u> </u> <u> </u> <div style="text-align: center;">A B</div>				2 CONDITIONS 80%		2 CONDITIONS 80%	

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

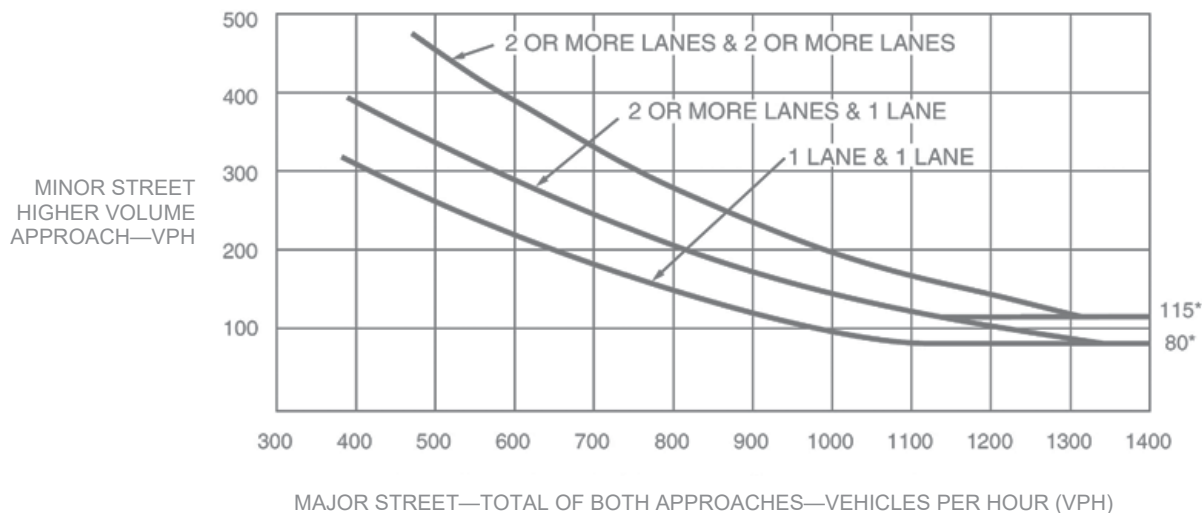
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	3509				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		40				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

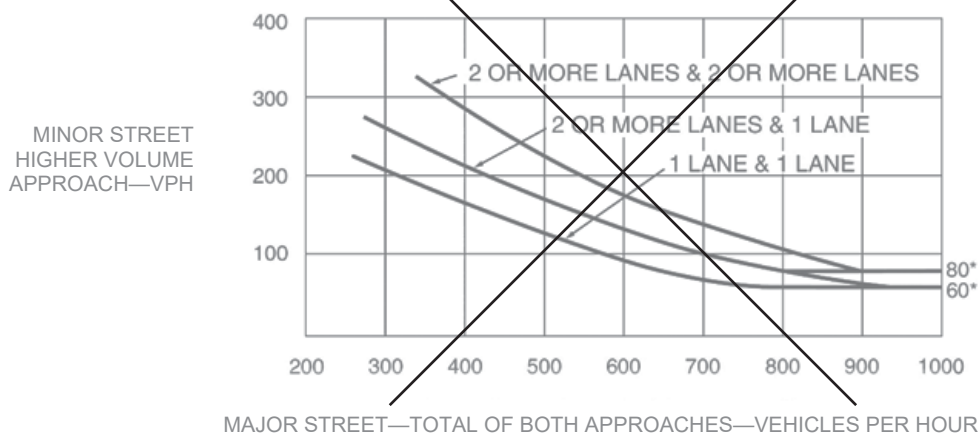
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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

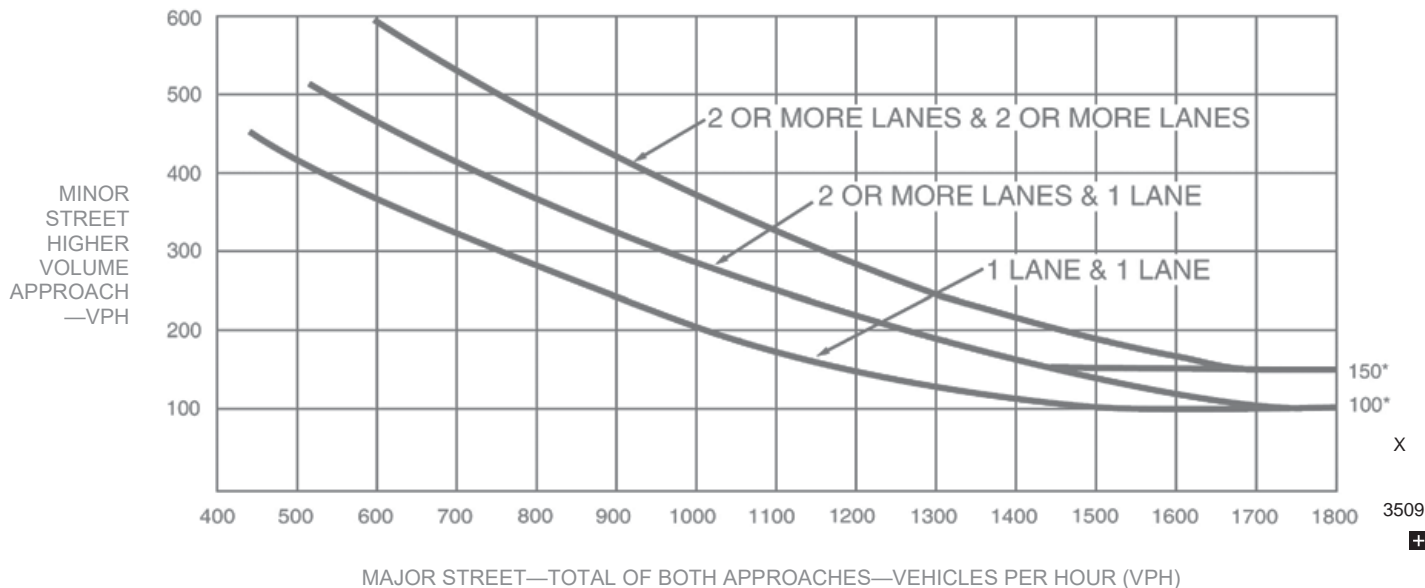


*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Peak Hour (continued)

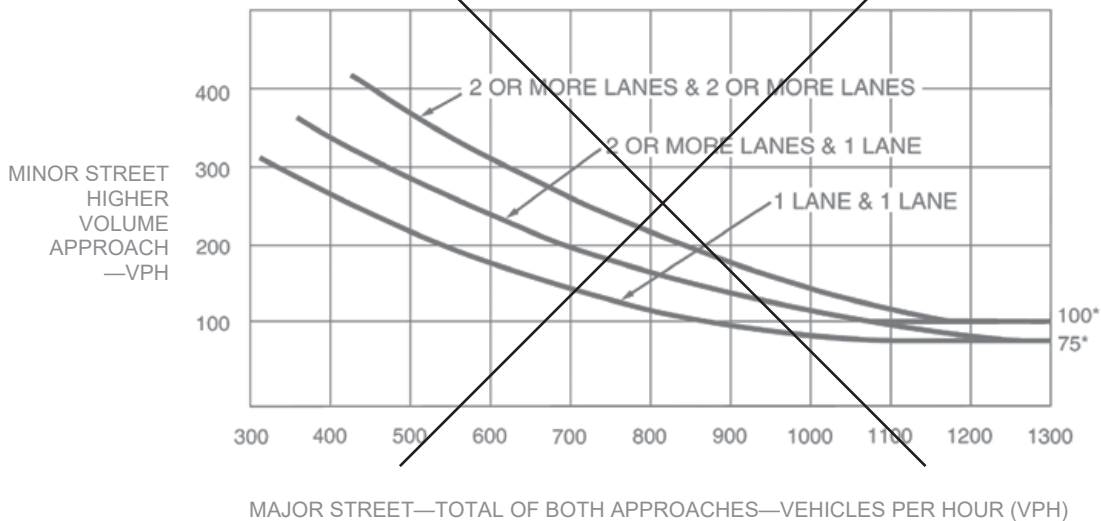
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

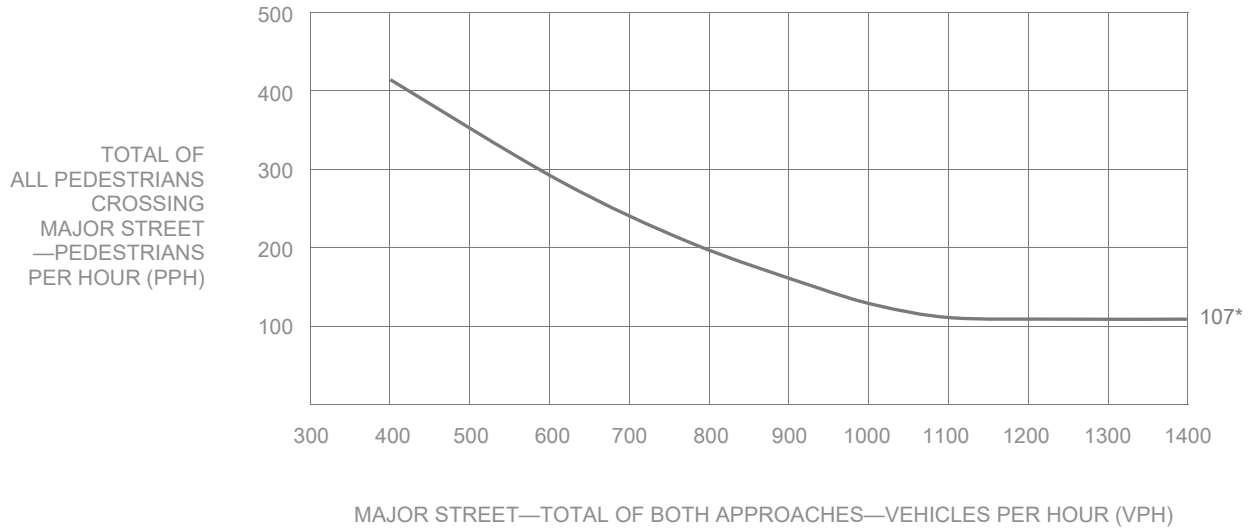
AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

Pedestrian Volume *(continued)*

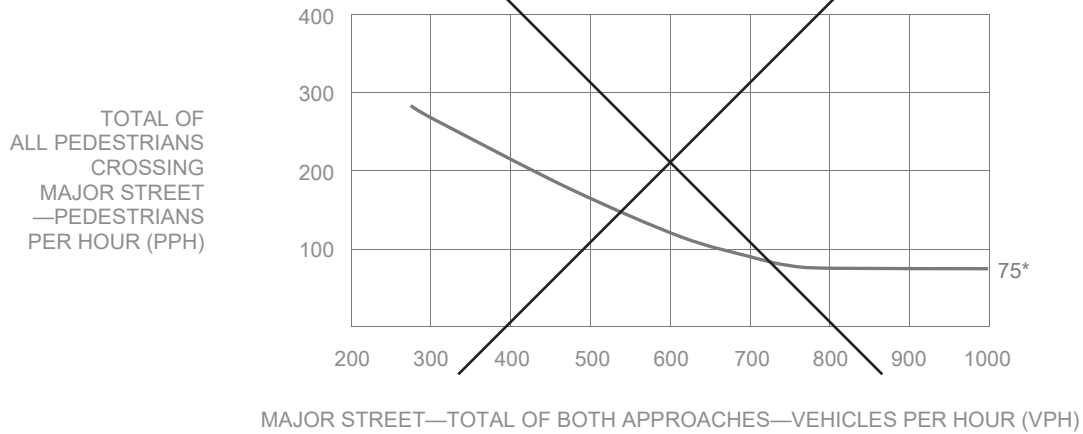
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

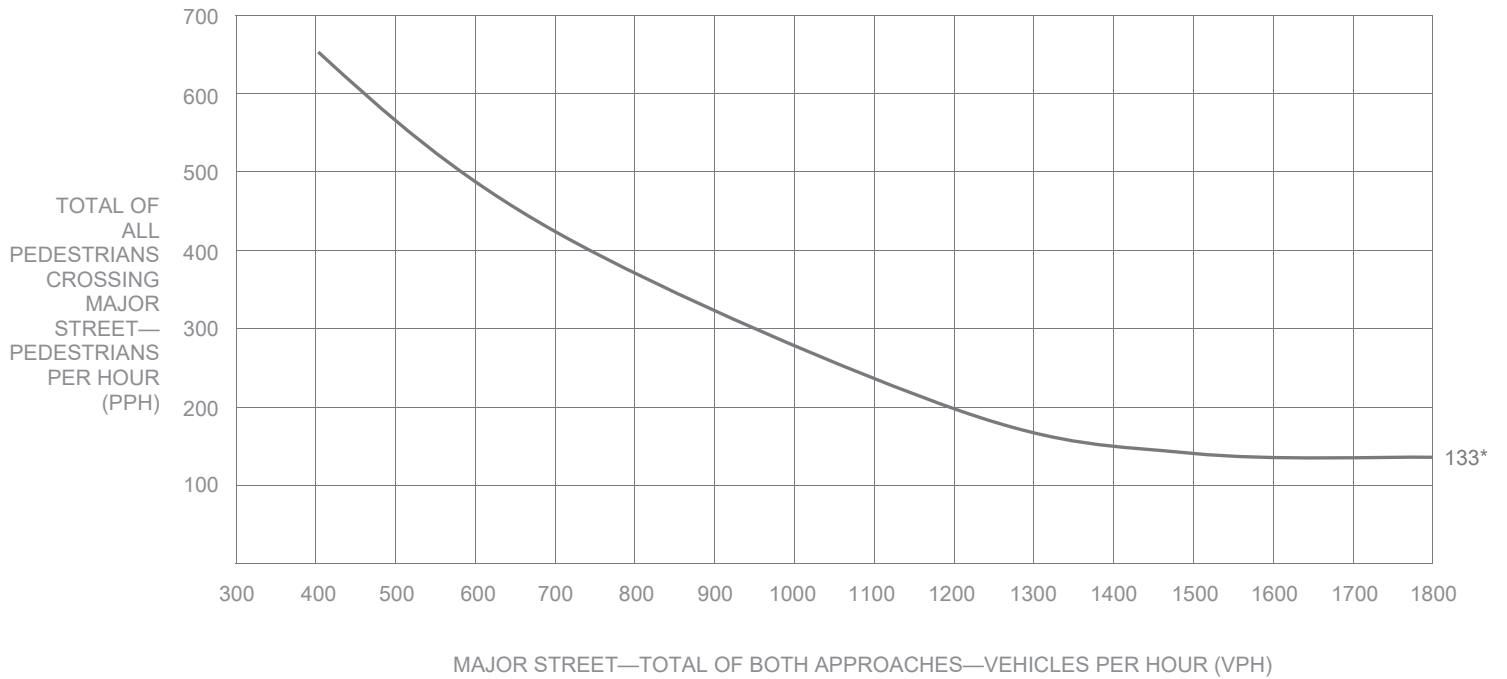


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

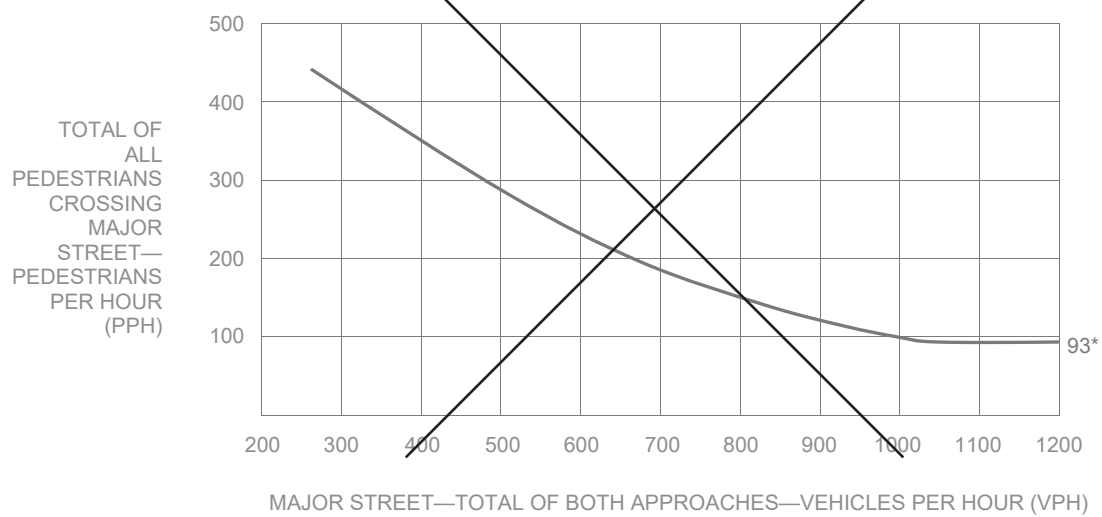
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO										
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div> </td> <td style="width: 20%;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">Number of Adequate Gaps</td> <td style="padding: 5px;"></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> <td style="padding: 5px;"></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-left: 10px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>			Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>															
	Number of Adequate Gaps															
School Age Pedestrians Crossing Street / hr																
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>											

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic	<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL		YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft		<input type="checkbox"/>	<input type="checkbox"/>
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.			<input type="checkbox"/>	<input type="checkbox"/>
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.				

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

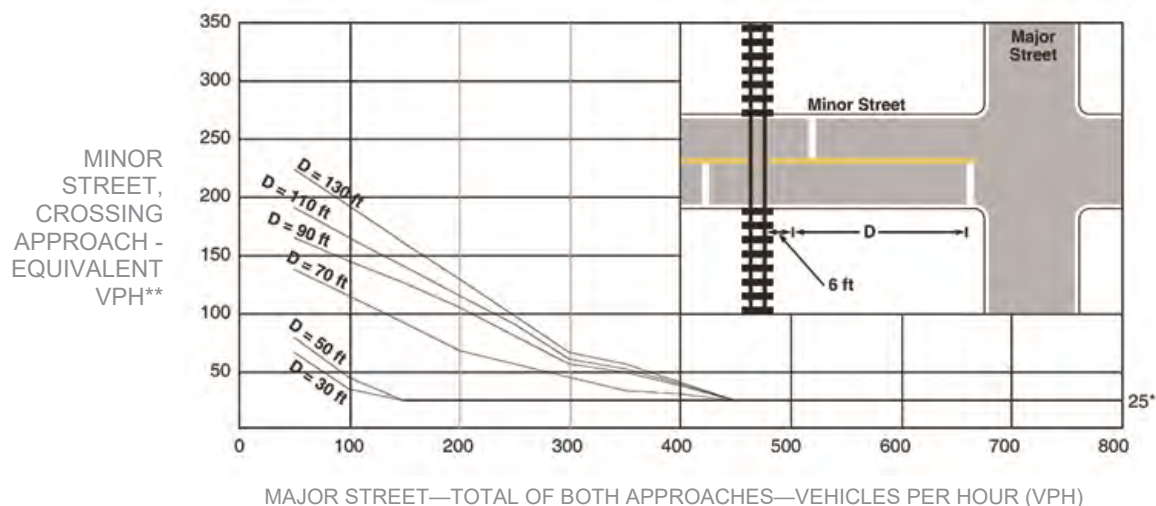
Intersection Near a Grade Crossing *(continued)*

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

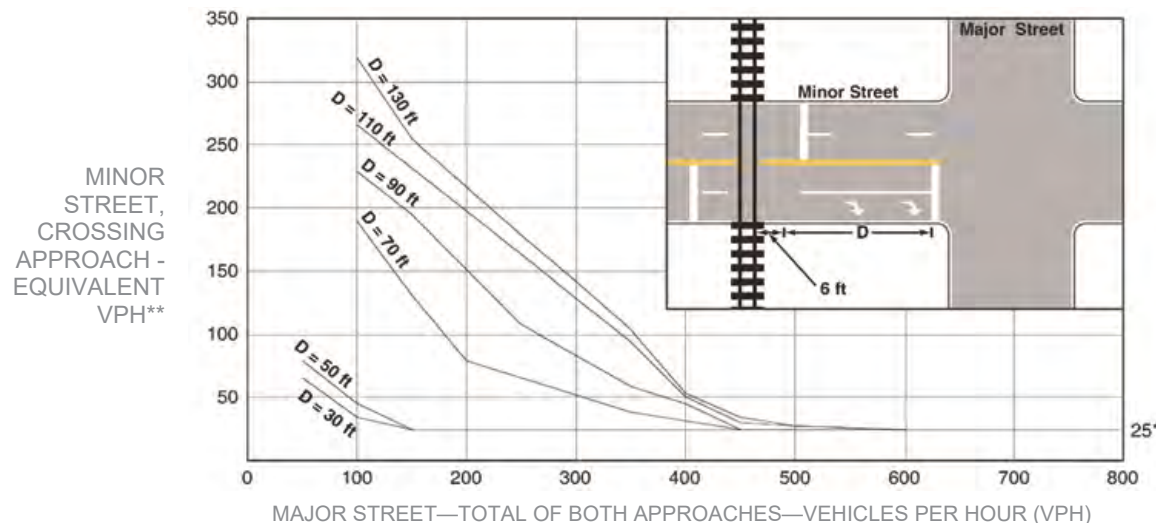
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____MAJOR ST: Sunset BoulevardMINOR ST: US 101 SB On-Ramp

Critical Approach Speed	}		or	Speed Limit	}	

Speed limit or critical speed on major street traffic > 40 mph.....	<input type="checkbox"/>	} RURAL (R)	<input checked="" type="checkbox"/> URBAN (U)
In built up area of isolated community of < 10,000 population.....	<input type="checkbox"/>		

Eight-Hour Vehicular Volume



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> (If Yes, fill in percentage)		
	U	R	U	R			
APPROACH LANES	1		2 or More				
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	3534		
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	40		

Hours							
05:00							

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> (If Yes, fill in percentage)		
	U	R	U	R			
APPROACH LANES	1		2 or More				
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	3534		
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	40		

Hours							
05:00							

COMBINATION OF A & B

			SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND		<input type="checkbox"/>	<input type="checkbox"/>
	B. INTERRUPTION OF CONTINUOUS TRAFFIC			
	AND			
AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/> No one condition satisfied, but following conditions fulfilled 80% or more..... <u> </u> <u> </u> <div style="text-align: center;">A B</div>				2 CONDITIONS 80%		2 CONDITIONS 80%	

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

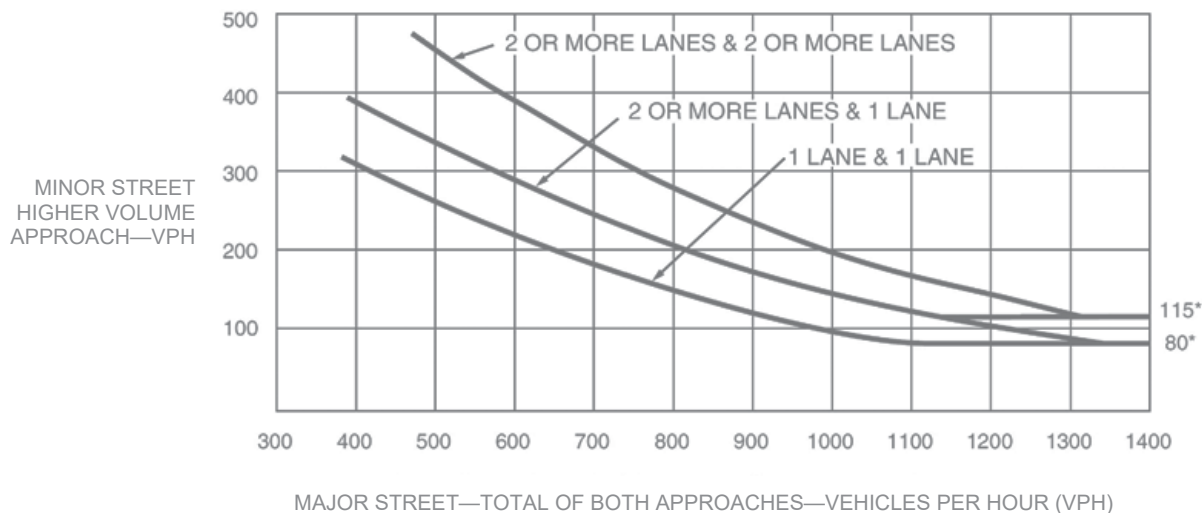
APPROACH LANES	Hours						YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	3534				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		40				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

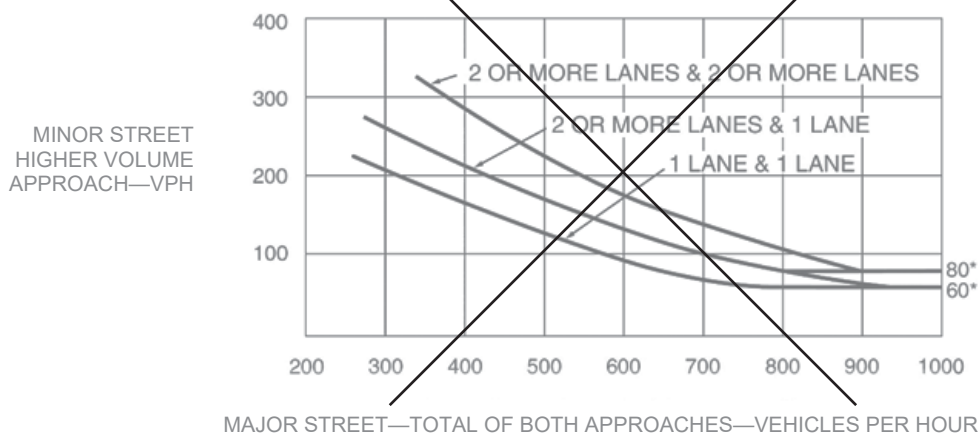
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT

3

N/A ☐

SATISFIED

YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	YES	NO	N/A
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

Hour

5:00

SATISFIED

YES ☐

NO ☒

APPROACH LANES	One	2 or More	
Both Approaches - Major Street		✓	3534
Higher Approach - Minor Street	✓		40

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)

OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)

YES

NO

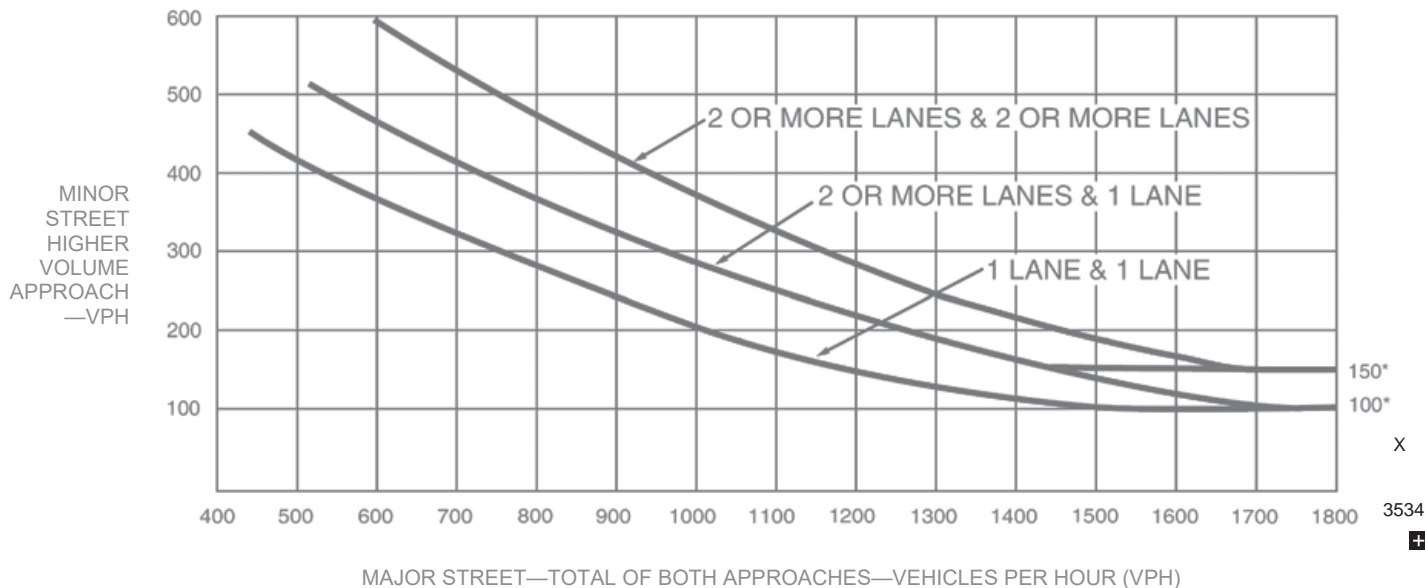
☐

☒

Peak Hour (continued)

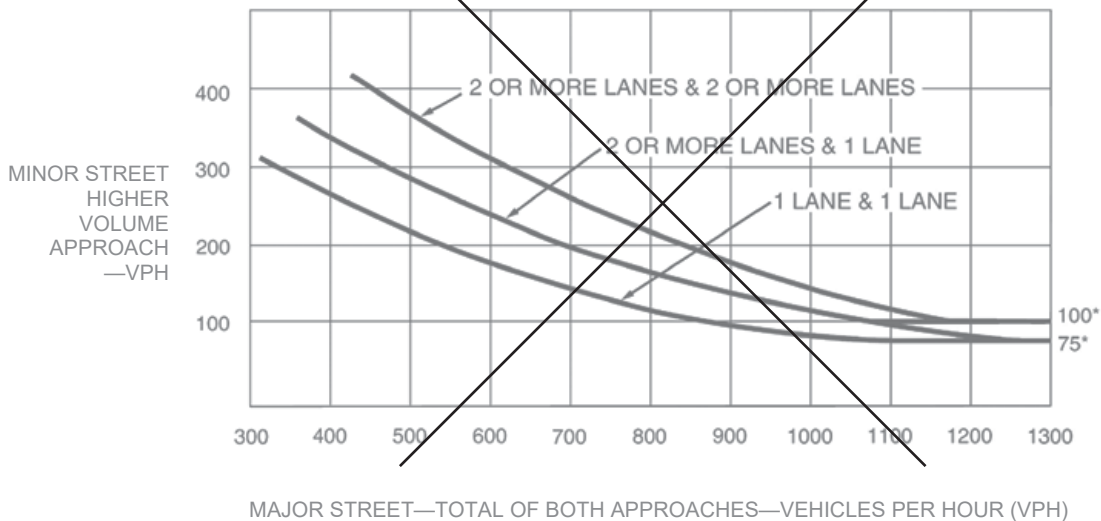
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED YES NO
☐ ☐

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

PART 2

SATISFIED YES NO
☐ ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

YES NO
☐ ☐

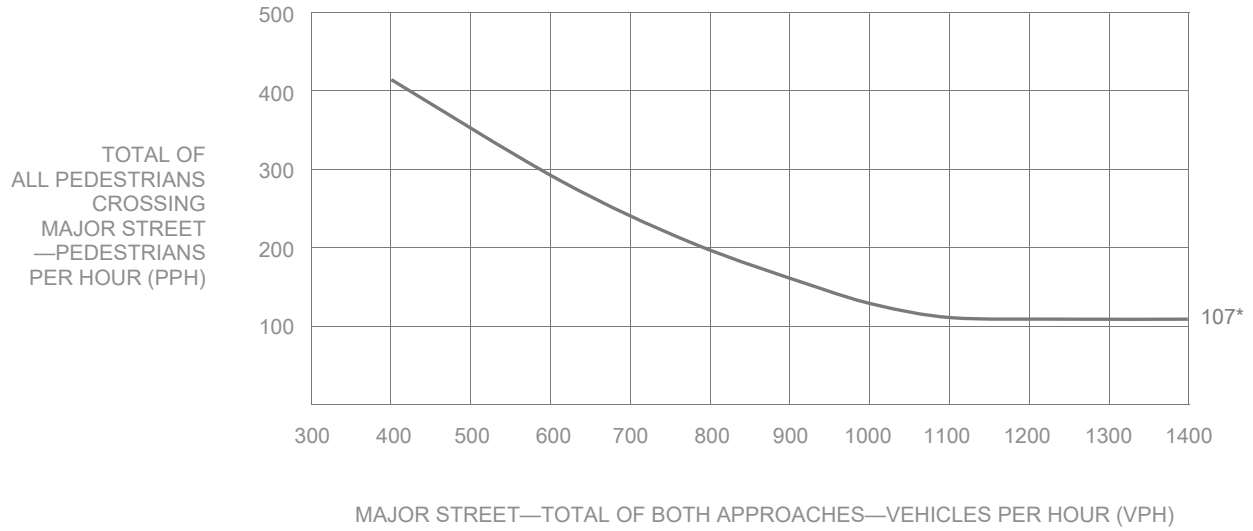
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

☐ ☐

Pedestrian Volume *(continued)*

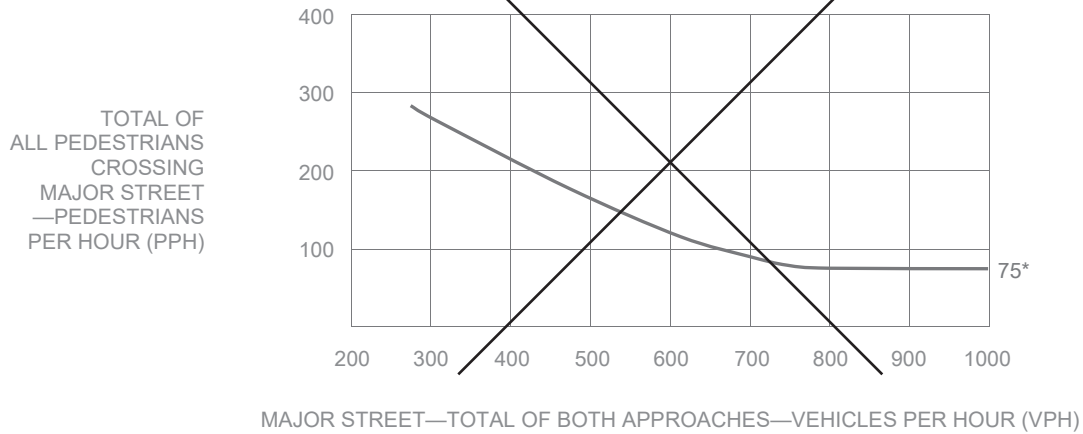
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

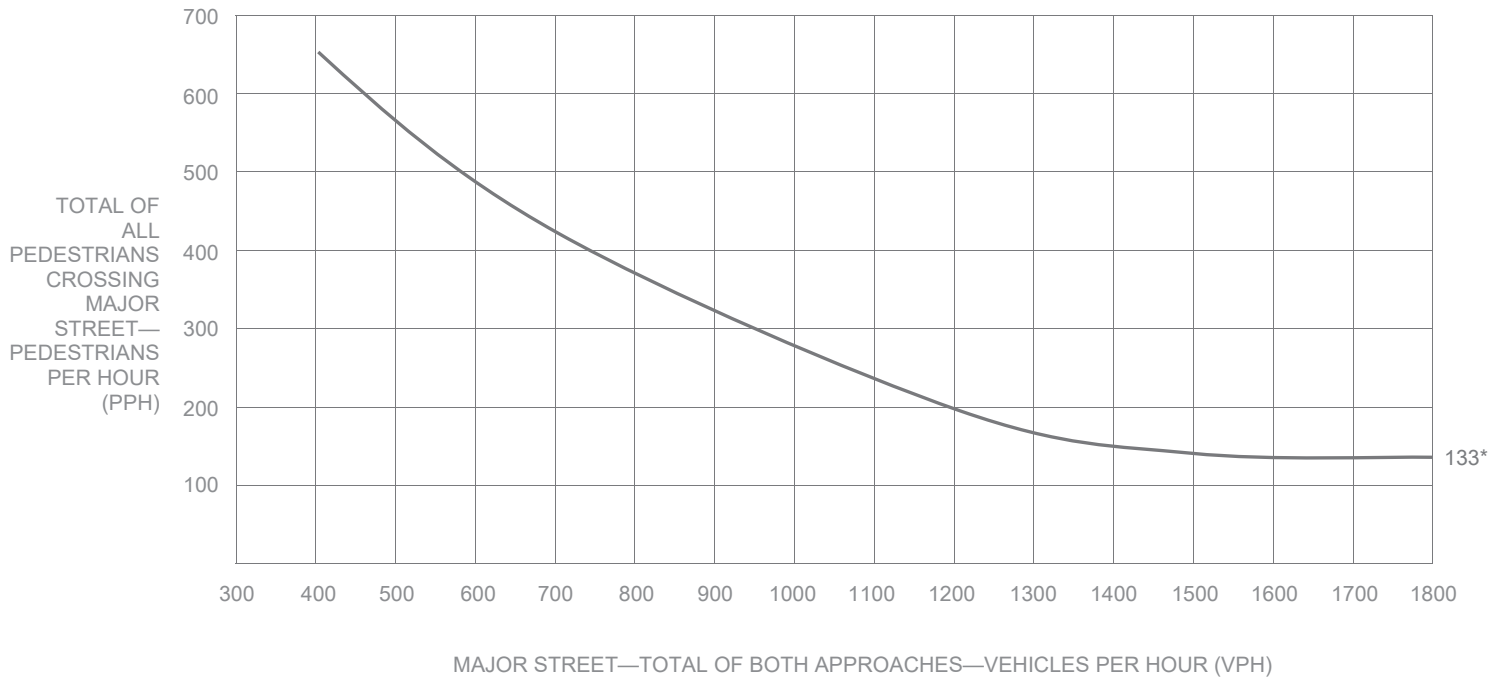


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

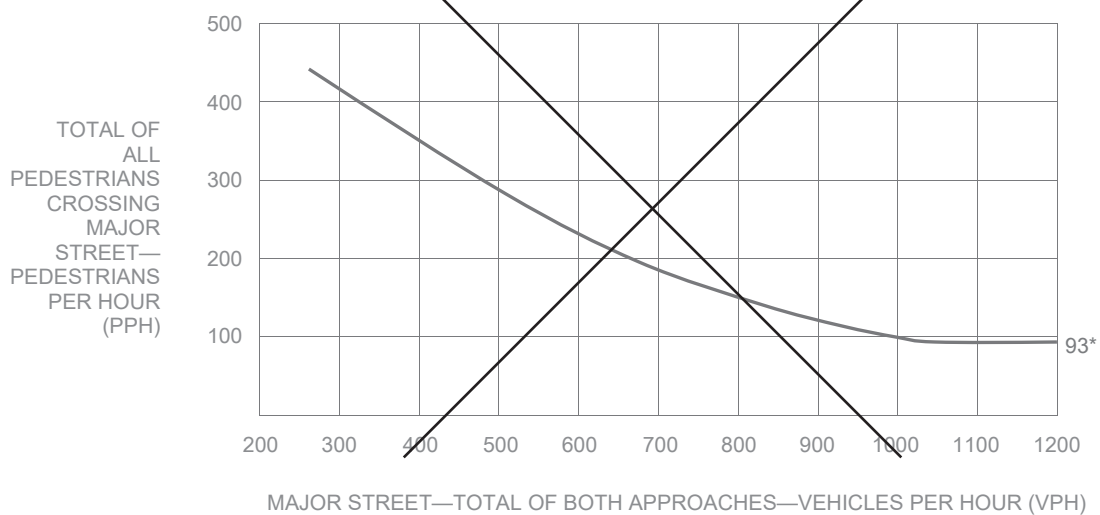
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div> </td> <td style="width: 20%;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-left: 10px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>												
School Age Pedestrians Crossing Street / hr													
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	

Coordinated Signal System

WARRANT
6

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

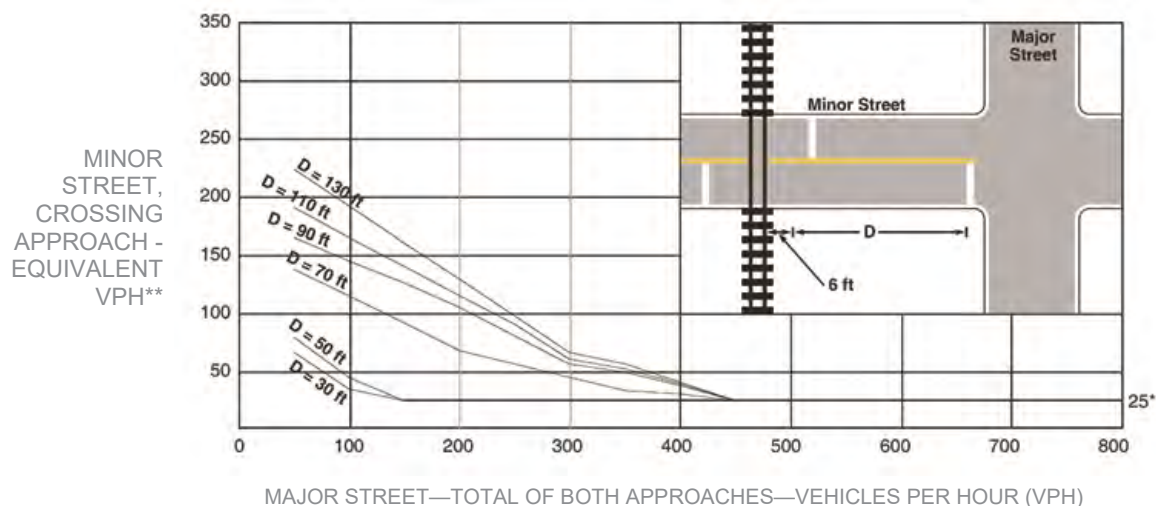
Intersection Near a Grade Crossing *(continued)*

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

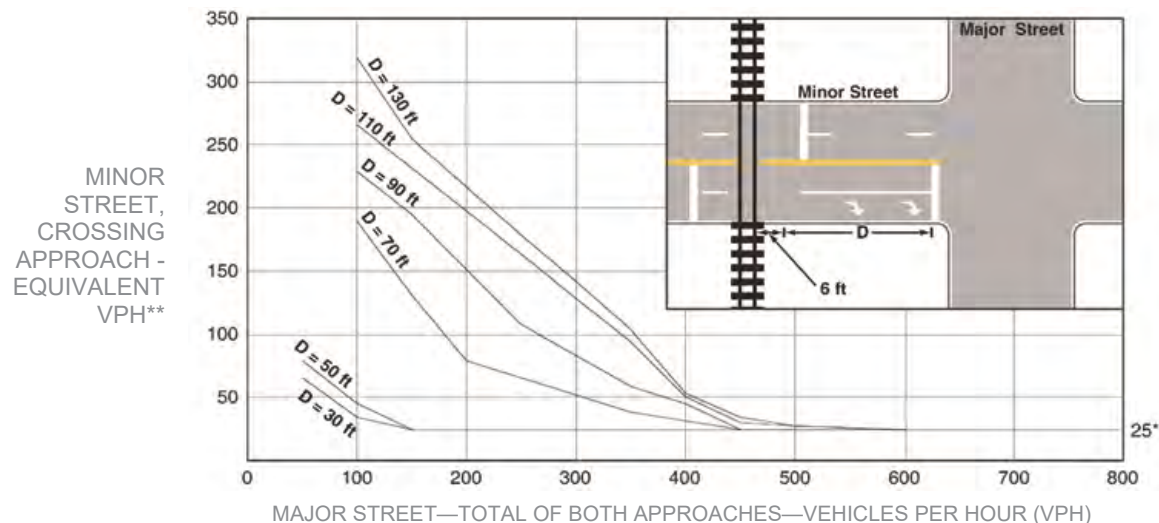
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

Traffic Signal Warrants Worksheet

 DATE 11/30/17 PREPARER GTC REVIEWER _____

 MAJOR ST: Sunset Boulevard

 MINOR ST: US 101 SB On-Ramp

 Critical Approach Speed } or Speed Limit }

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

Eight-Hour Vehicular Volume


 N/A ☒
 SATISFIED YES ☐
 NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A
Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)		
	U	R	U	R			
APPROACH LANES	1		2 or More				
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	4407		
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	62		

Hours							
05:00							

Condition B
Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)		
	U	R	U	R			
APPROACH LANES	1		2 or More				
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	4407		
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	62		

Hours							
05:00							

COMBINATION OF A & B

			SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	N/A <input type="checkbox"/>	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/> No one condition satisfied, but following conditions fulfilled 80% or more..... <u> </u> <u> </u> <div style="text-align: center;">A B</div>				2 CONDITIONS 80%		2 CONDITIONS 80%	

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

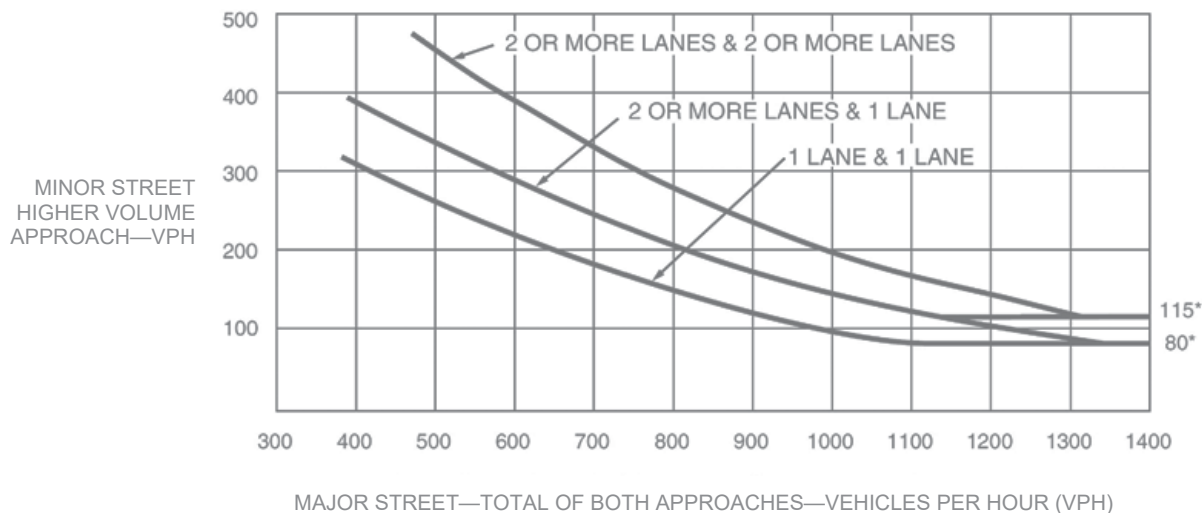
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	4407				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		62				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

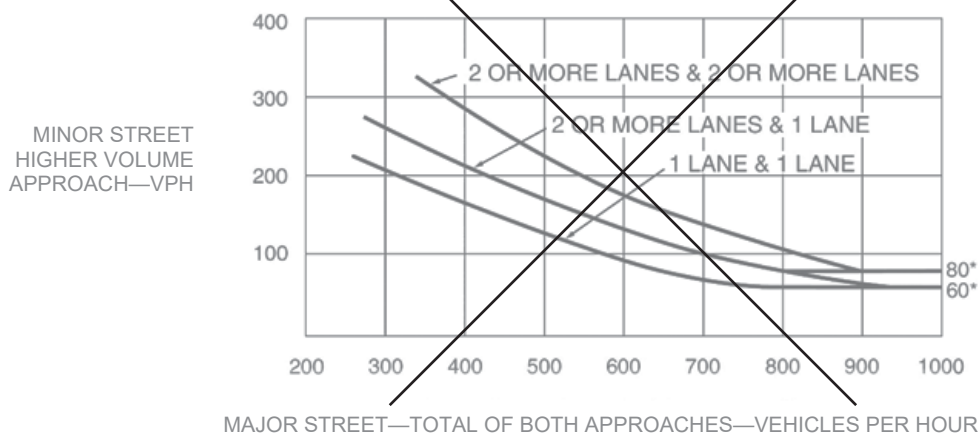
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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

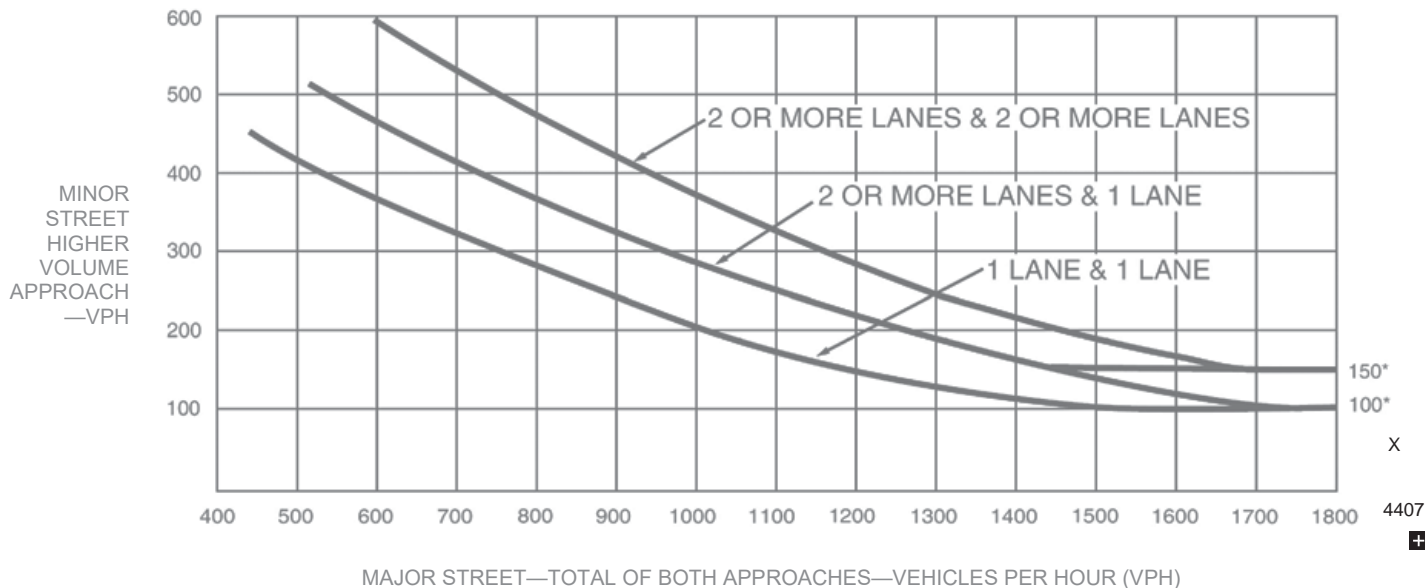


*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Peak Hour (continued)

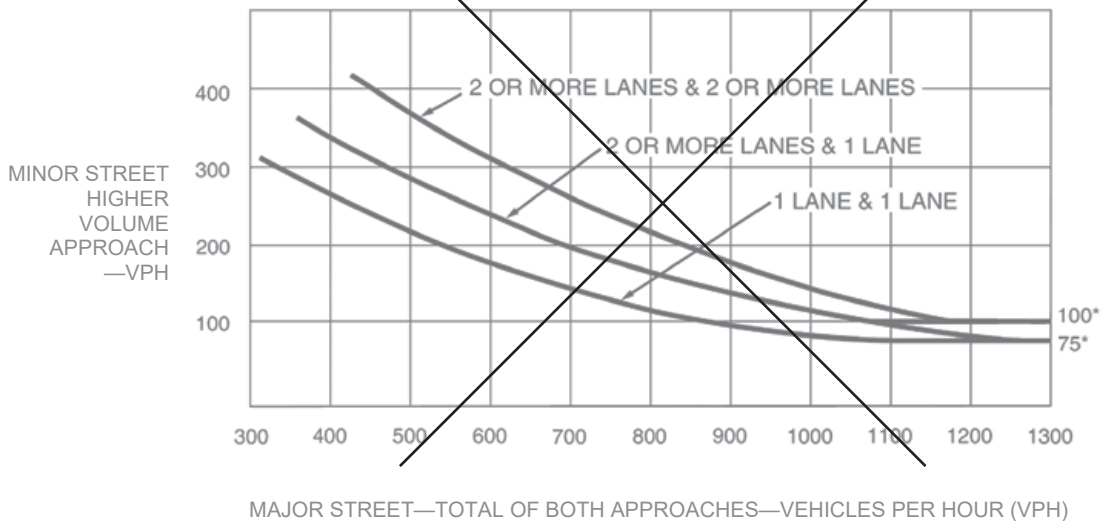
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

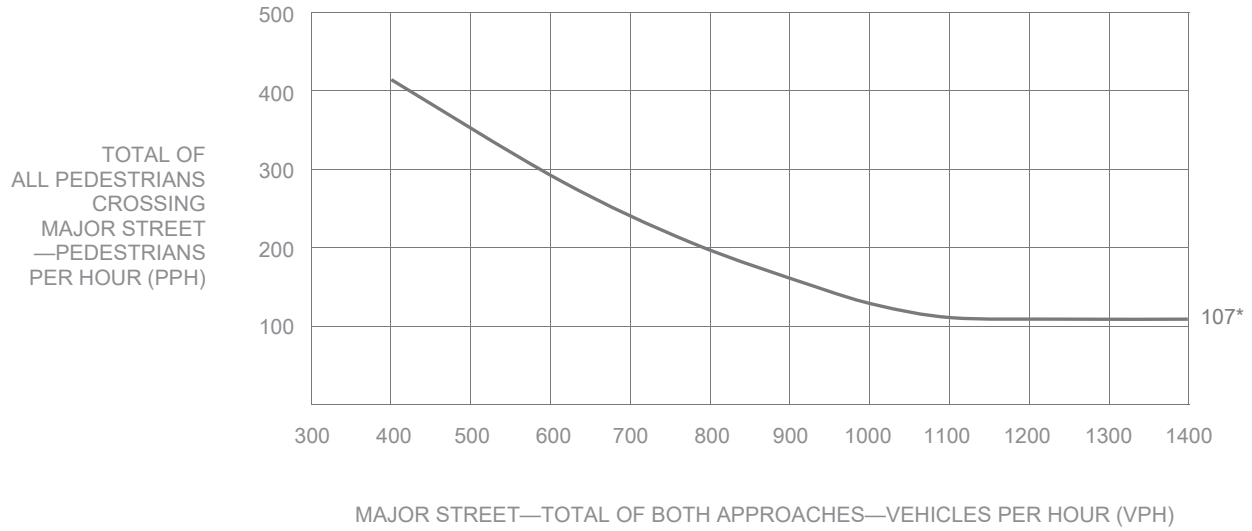
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

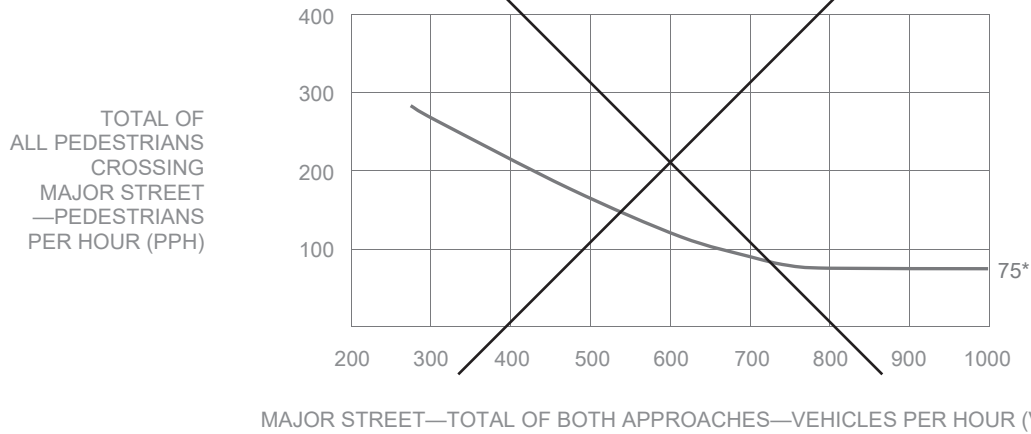
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

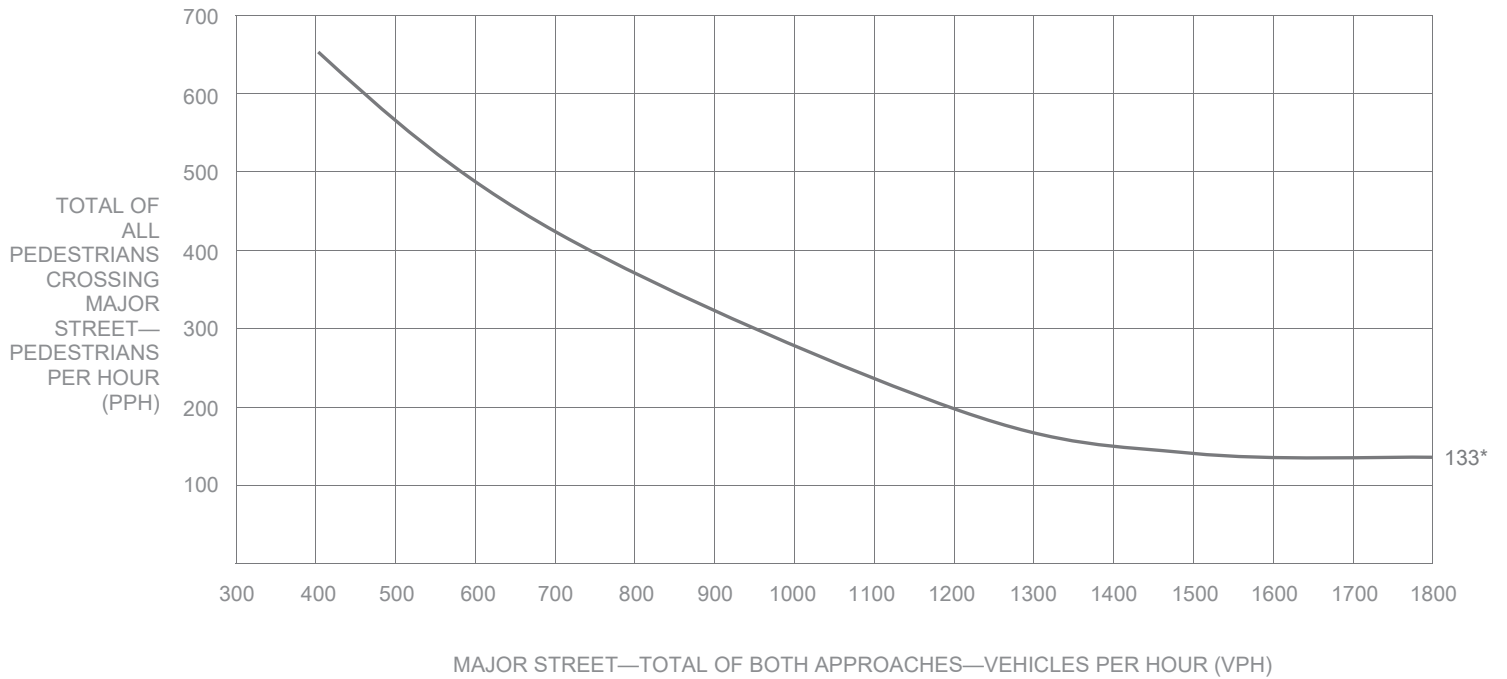


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

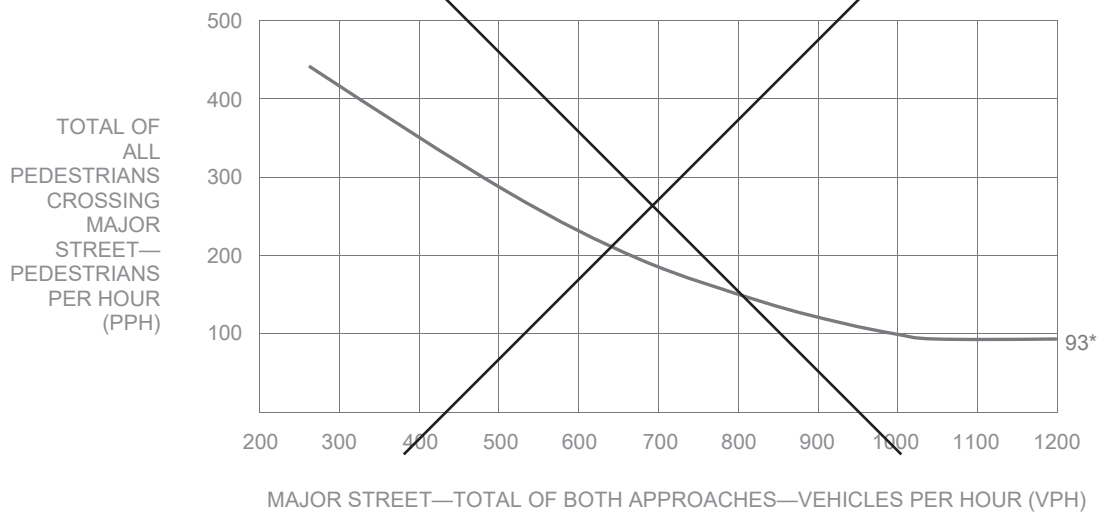
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div> </td> <td style="width: 20%; padding: 5px;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>												
School Age Pedestrians Crossing Street / hr													
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic	<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

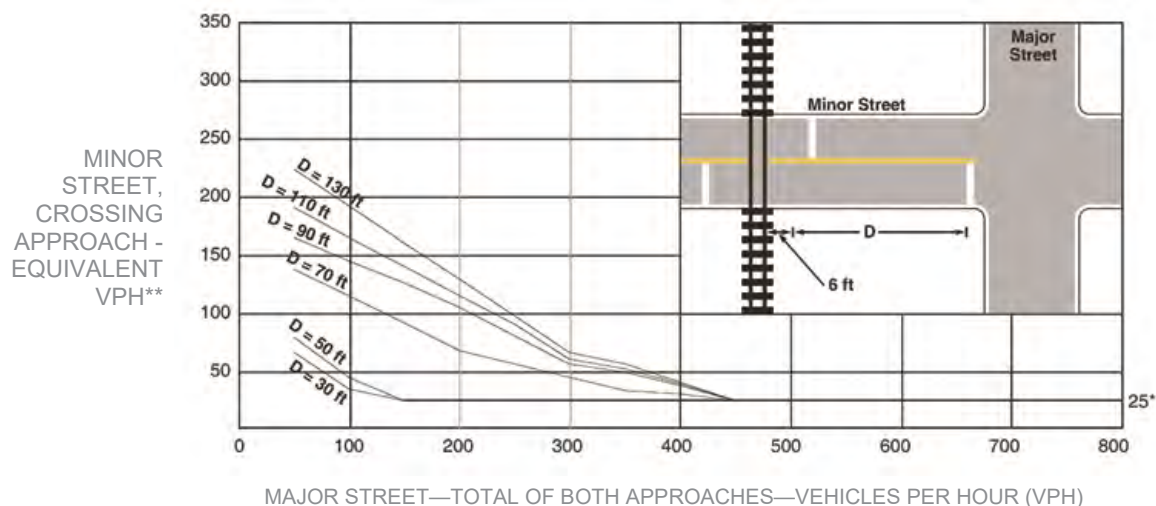
Intersection Near a Grade Crossing *(continued)*

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

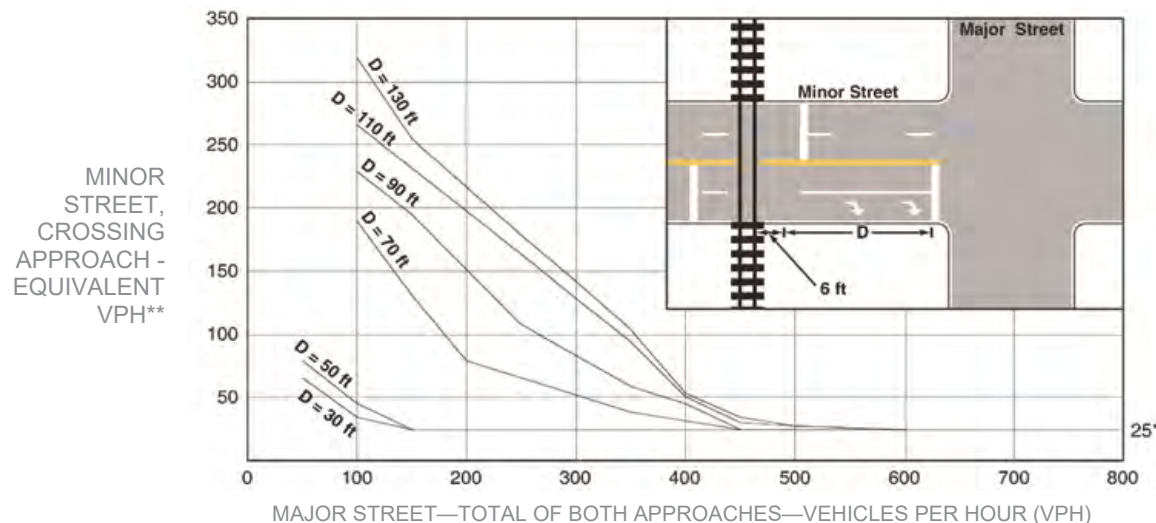
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____MAJOR ST: Sunset BoulevardMINOR ST: US 101 SB On-Ramp

Critical Approach Speed	}		or	Speed Limit	}	

Speed limit or critical speed on major street traffic > 40 mph.....	<input type="checkbox"/>	} RURAL (R)	<input checked="" type="checkbox"/> URBAN (U)
In built up area of isolated community of < 10,000 population.....	<input type="checkbox"/>		

Eight-Hour Vehicular Volume



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
80%	<input type="checkbox"/>	<input type="checkbox"/>
IN REDUCTION MINOR STREET (fill in percentage)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)				RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> <i>(If Yes, fill in percentage)</i>							
		U	R	U	R	<div><input type="checkbox"/> _____ %</div>							
APPROACH LANES	1		2 or More		Hours								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	05:00								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	4432								
					62								

Condition B

Interruption of Continuous Traffic

	SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>	
80%	<input type="checkbox"/>	<input type="checkbox"/>	
IN REDUCTION MINOR STREET (fill in percentage)	<input type="checkbox"/>		<input type="checkbox"/> _____%

	MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)				RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> (If Yes, fill in percentage)							
	U	R	U	R								
APPROACH LANES	1		2 or More		Hours							
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	05:00							
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	4432							
					62							

COMBINATION OF A & B

SATISFIED	YES	NO
	<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/> <u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... <u> </u> <u> </u> <div style="text-align: center;">A B</div>				2 CONDITIONS 80%		2 CONDITIONS 80%	

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

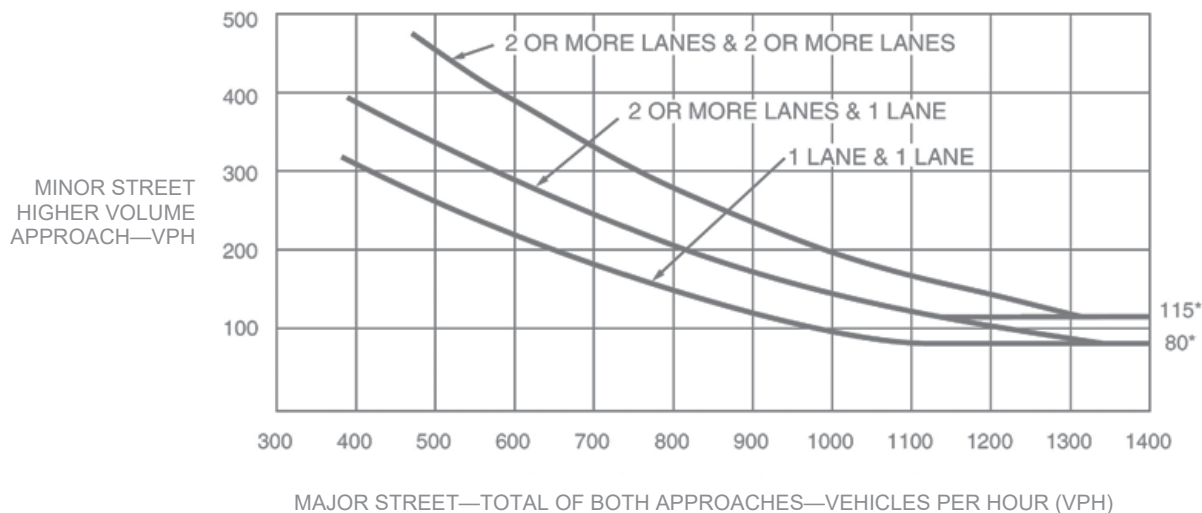
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	4432				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		62					<input type="checkbox"/>	<input type="checkbox"/>
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

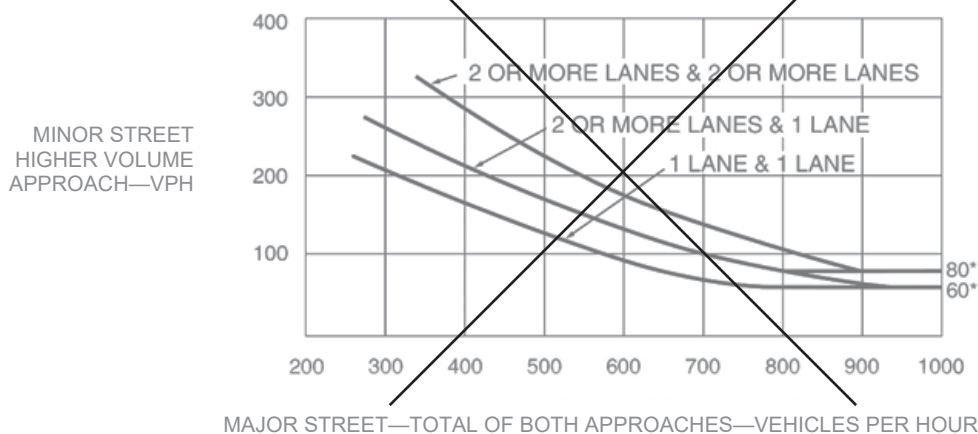
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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

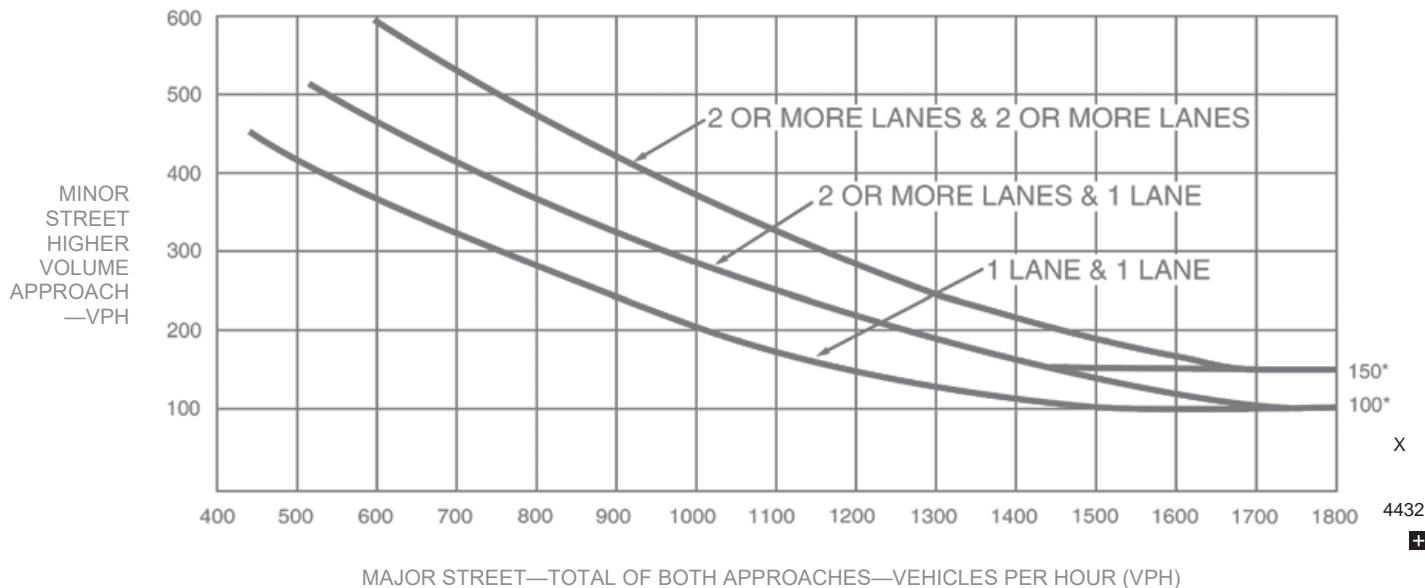


*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Peak Hour (continued)

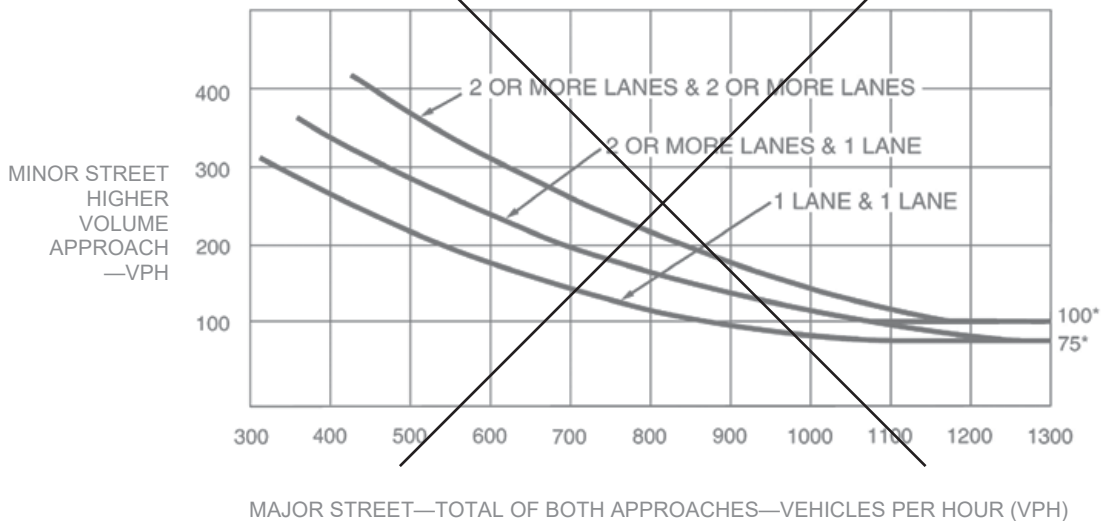
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

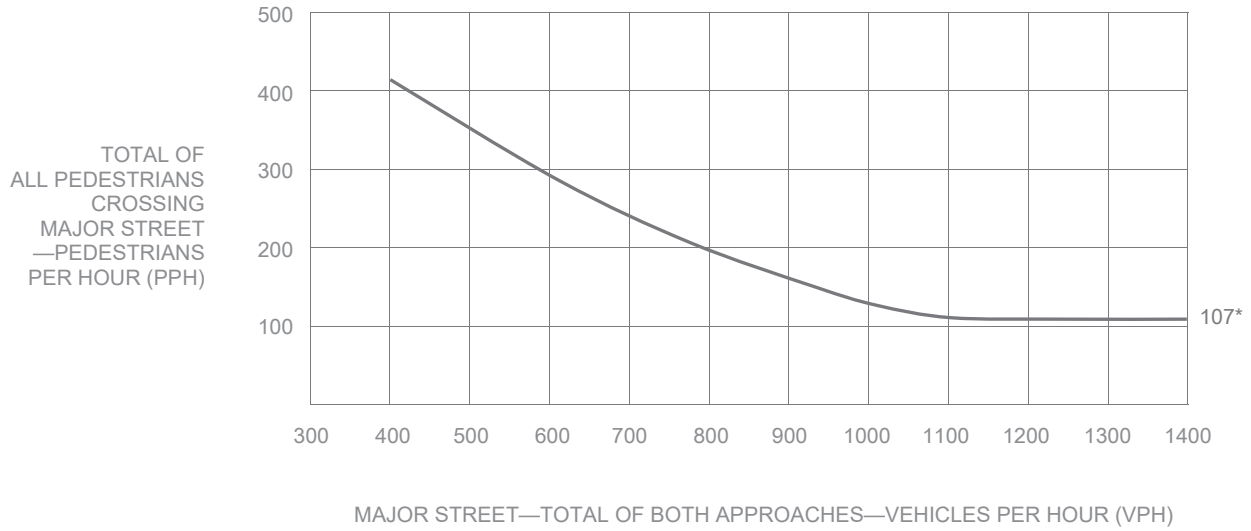
AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

Pedestrian Volume *(continued)*

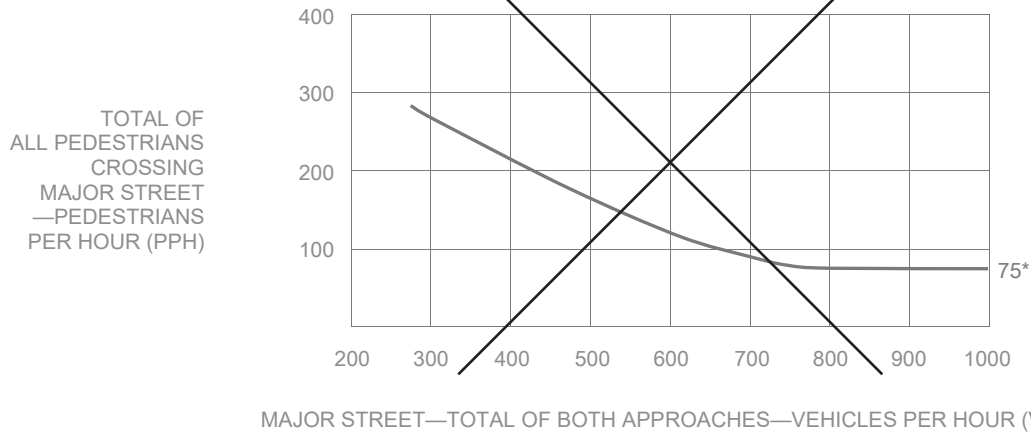
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

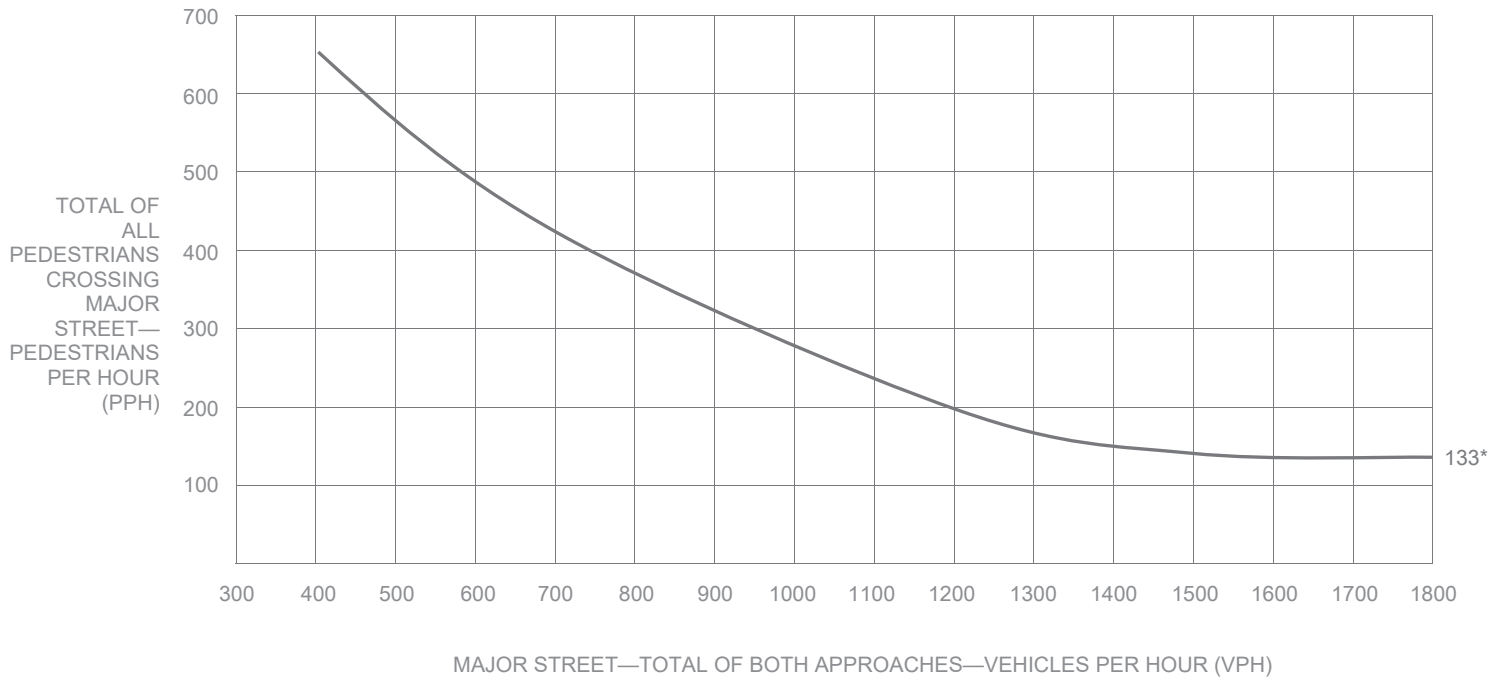


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

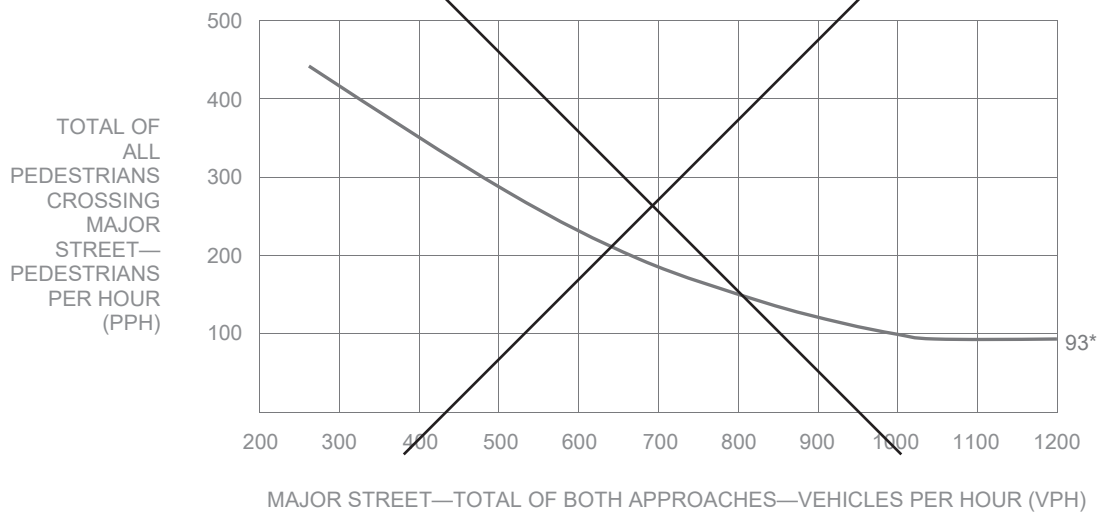
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO										
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div> </td> <td style="width: 20%;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">Number of Adequate Gaps</td> <td></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> <td></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-left: 10px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>			Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>															
	Number of Adequate Gaps															
School Age Pedestrians Crossing Street / hr																
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>											

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	YES NO	
Highway 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				
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

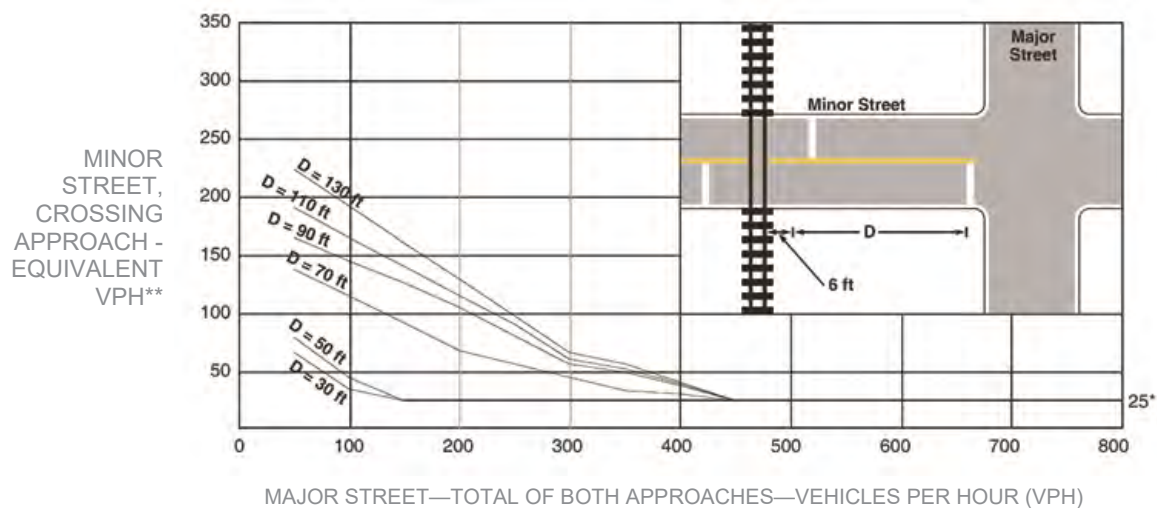
Intersection Near a Grade Crossing *(continued)*

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

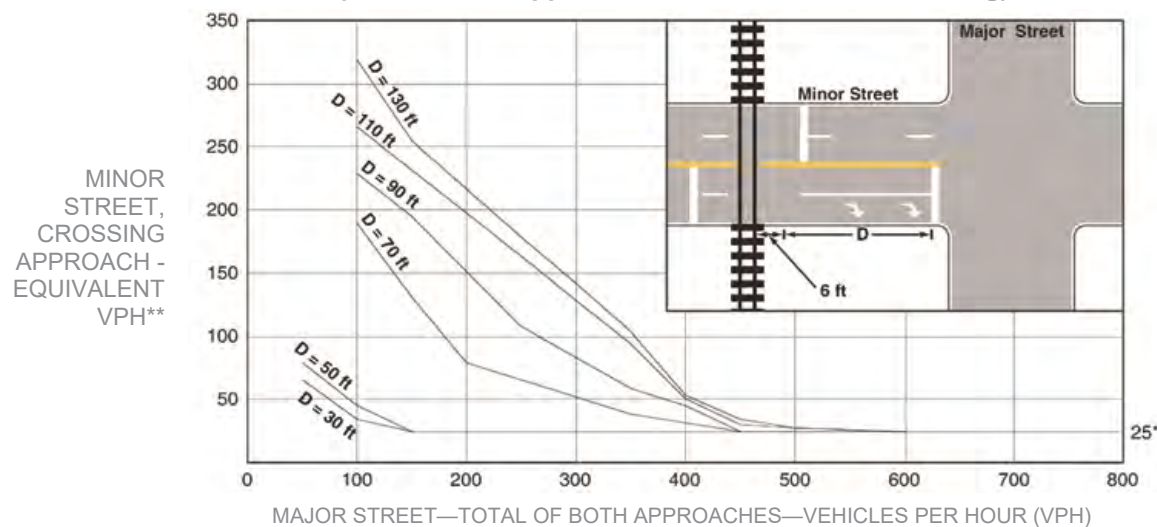
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.



PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: US 101 NB Off-Ramp

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1319								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	54								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1319								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	54								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND		<input type="checkbox"/>	<input type="checkbox"/>
	B. INTERRUPTION OF CONTINUOUS TRAFFIC			
	AND			
AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

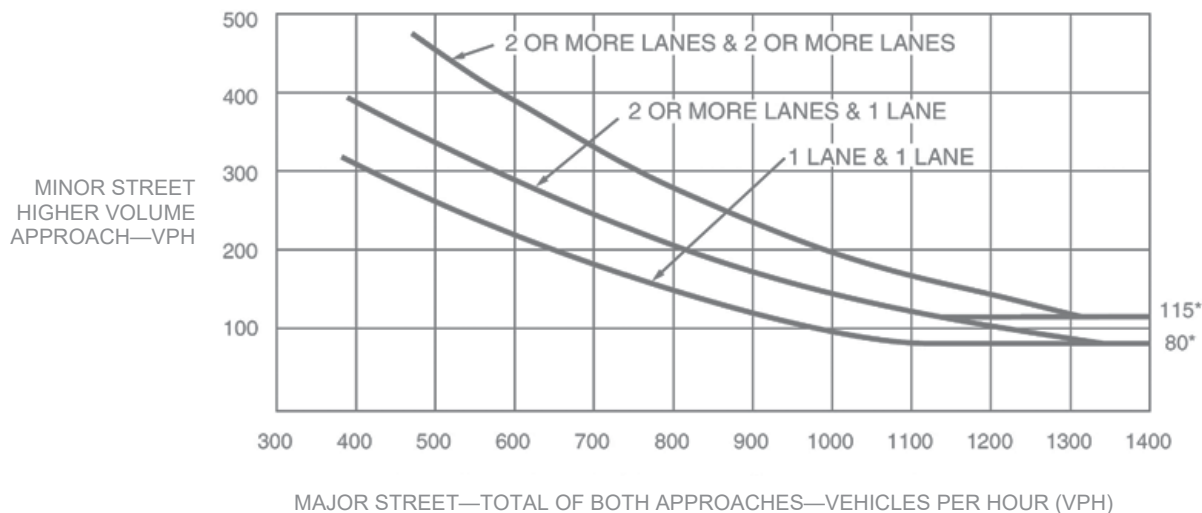
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	1319				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street		✓	54					_____ %	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

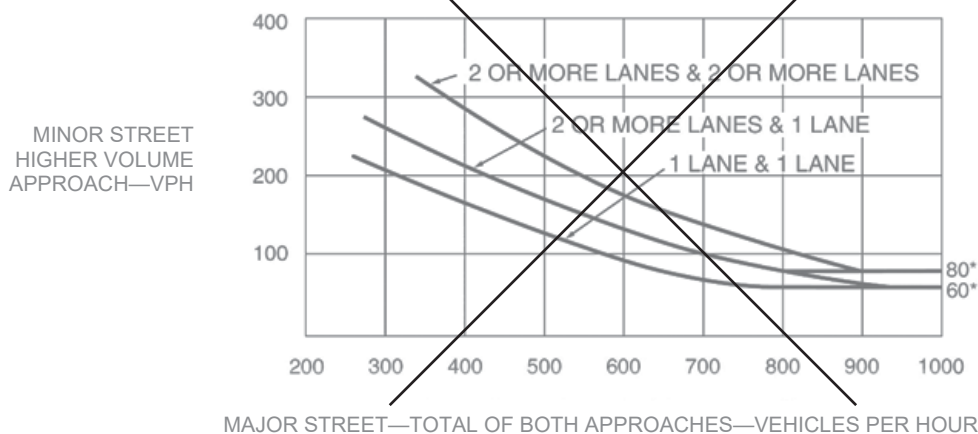
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT

3

N/A ☐

SATISFIED

YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>

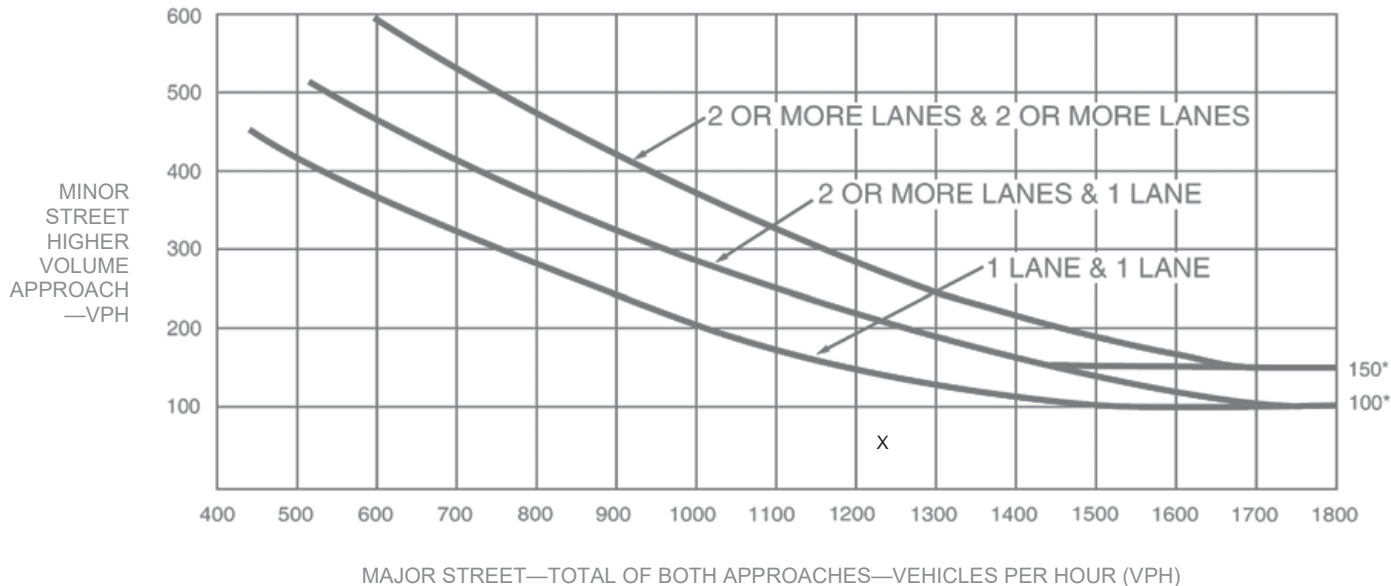
APPROACH LANES	One	2 or More	Hour	
Both Approaches - Major Street		✓	5:00 1319	
Higher Approach - Minor Street		✓	54	

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Peak Hour (continued)

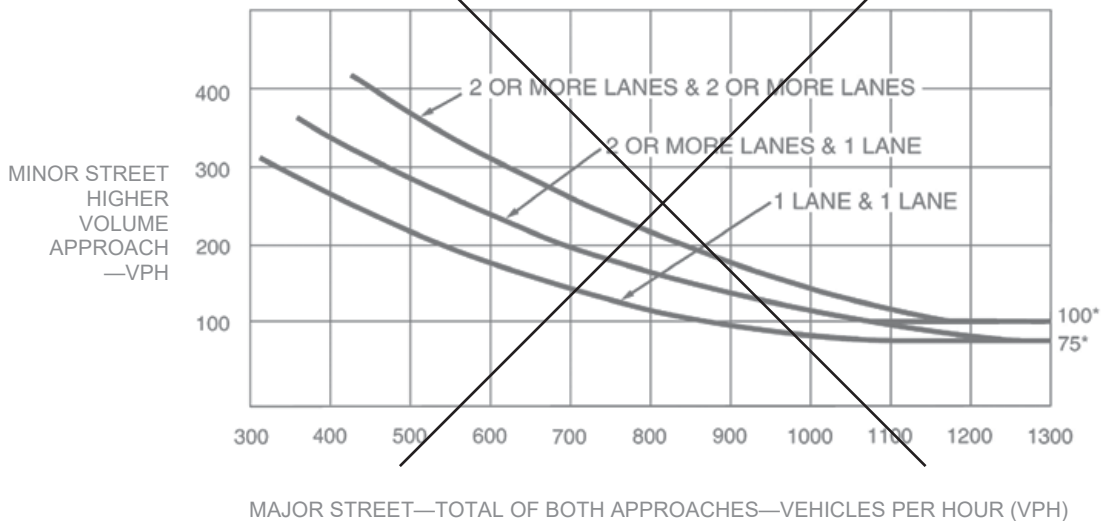
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED YES NO
☐ ☐

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED YES NO
100% ☐ ☐
50% ☐ ☐

15% WALKING RATE _____ fps

PART 2

SATISFIED YES NO
☐ ☐

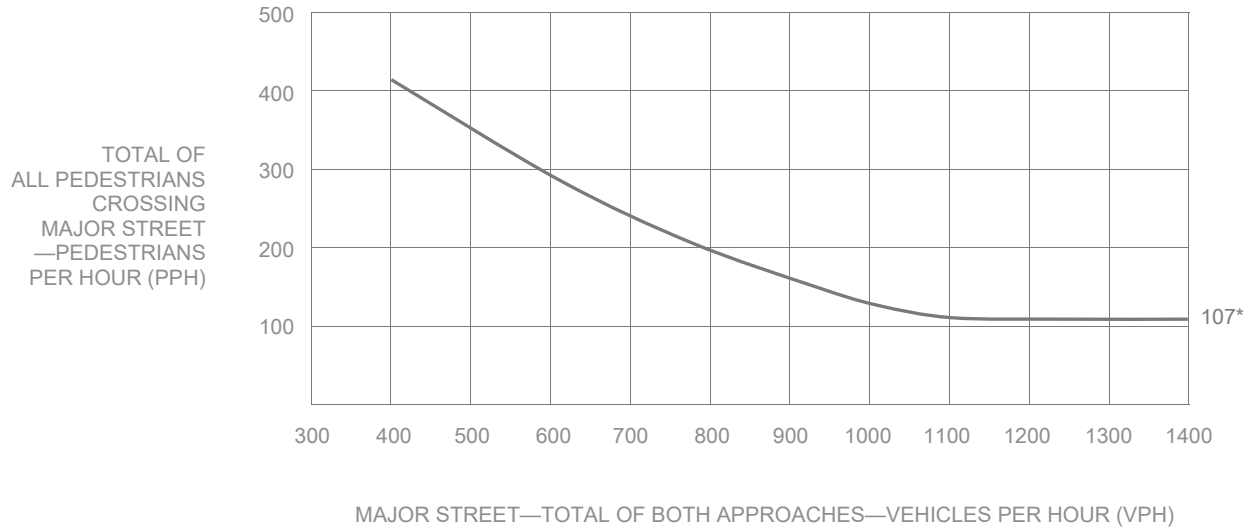
	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH

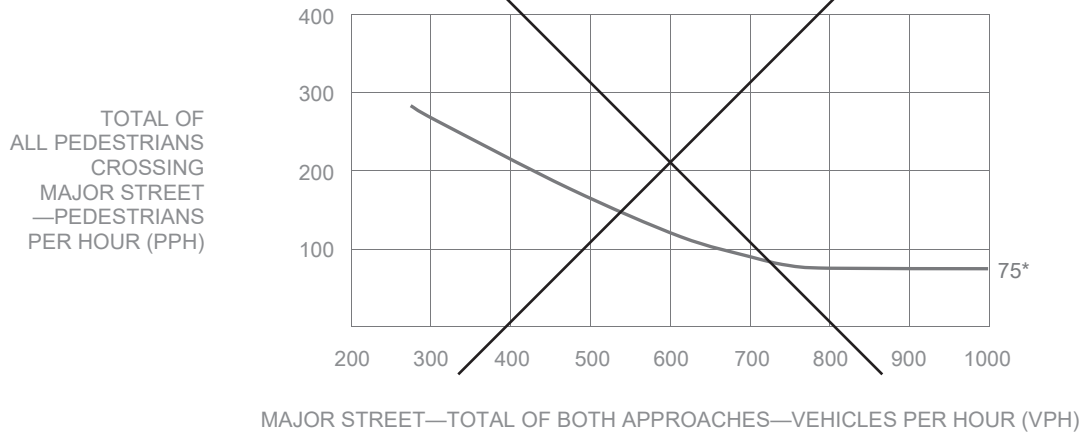
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH

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

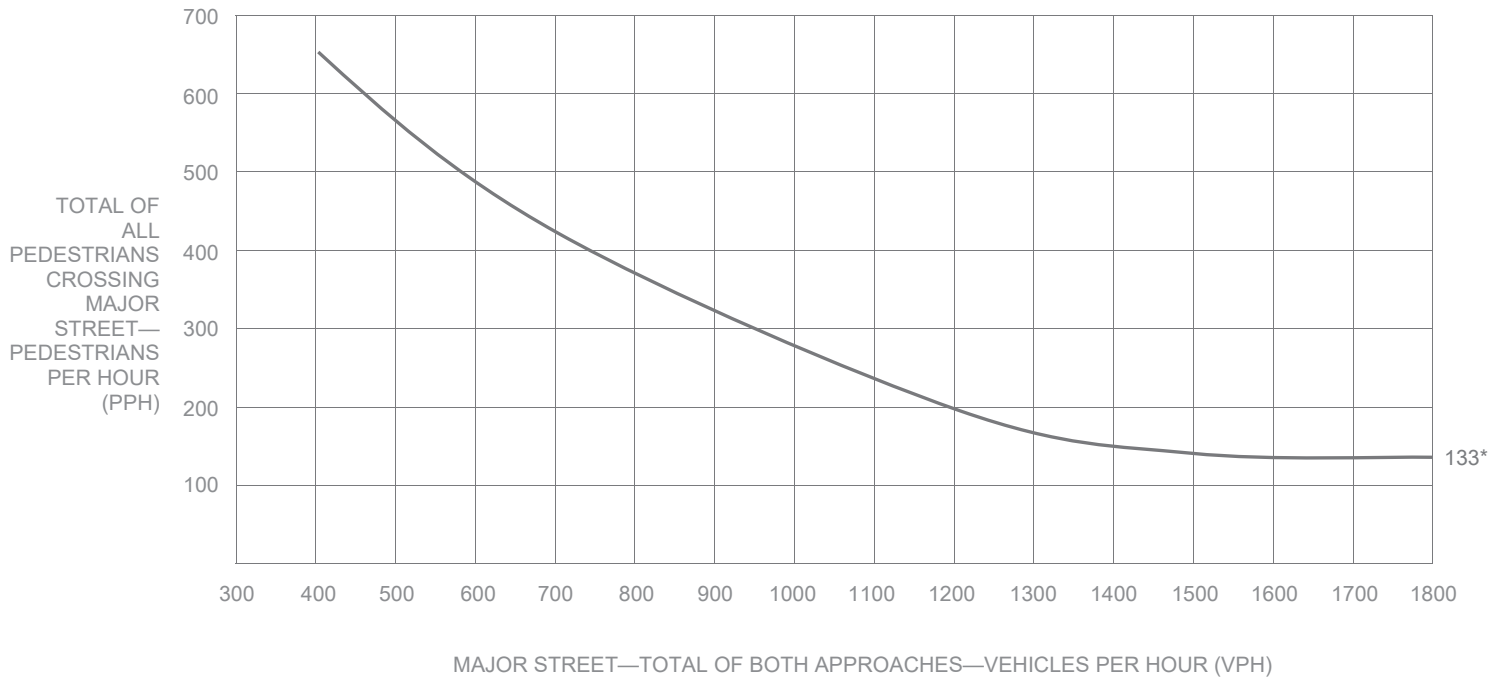


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

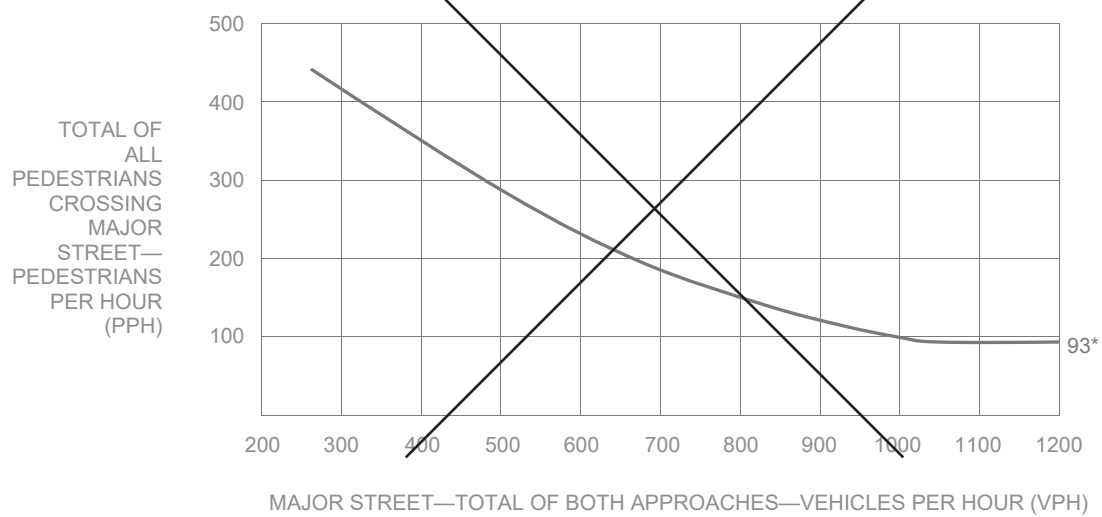
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Minutes Children Using Crossing</td> <td style="width: 50%; padding: 5px;">Hour</td> </tr> <tr> <td style="width: 50%; padding: 5px;">Number of Adequate Gaps</td> <td style="width: 50%; padding: 5px;"></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="width: 45%; padding: 5px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Gaps < Minutes</div> <div style="border: 1px solid black; padding: 5px;">AND Children ≥ 20/hr</div> </div> </div> </td> </tr> </table> </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Minutes Children Using Crossing</td> <td style="width: 50%; padding: 5px;">Hour</td> </tr> <tr> <td style="width: 50%; padding: 5px;">Number of Adequate Gaps</td> <td style="width: 50%; padding: 5px;"></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="width: 45%; padding: 5px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Gaps < Minutes</div> <div style="border: 1px solid black; padding: 5px;">AND Children ≥ 20/hr</div> </div> </div>	Minutes Children Using Crossing	Hour	Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr		YES	NO
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Minutes Children Using Crossing</td> <td style="width: 50%; padding: 5px;">Hour</td> </tr> <tr> <td style="width: 50%; padding: 5px;">Number of Adequate Gaps</td> <td style="width: 50%; padding: 5px;"></td> </tr> <tr> <td colspan="2" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="width: 45%; padding: 5px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Gaps < Minutes</div> <div style="border: 1px solid black; padding: 5px;">AND Children ≥ 20/hr</div> </div> </div>	Minutes Children Using Crossing	Hour	Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr							
Minutes Children Using Crossing	Hour												
Number of Adequate Gaps													
School Age Pedestrians Crossing Street / hr													
				<input type="checkbox"/>	<input type="checkbox"/>								
AND, Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

PART B		SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	
		<input type="checkbox"/>	<input type="checkbox"/>	
OR, The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	

Coordinated Signal System

WARRANT
6

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		<input type="checkbox"/>

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

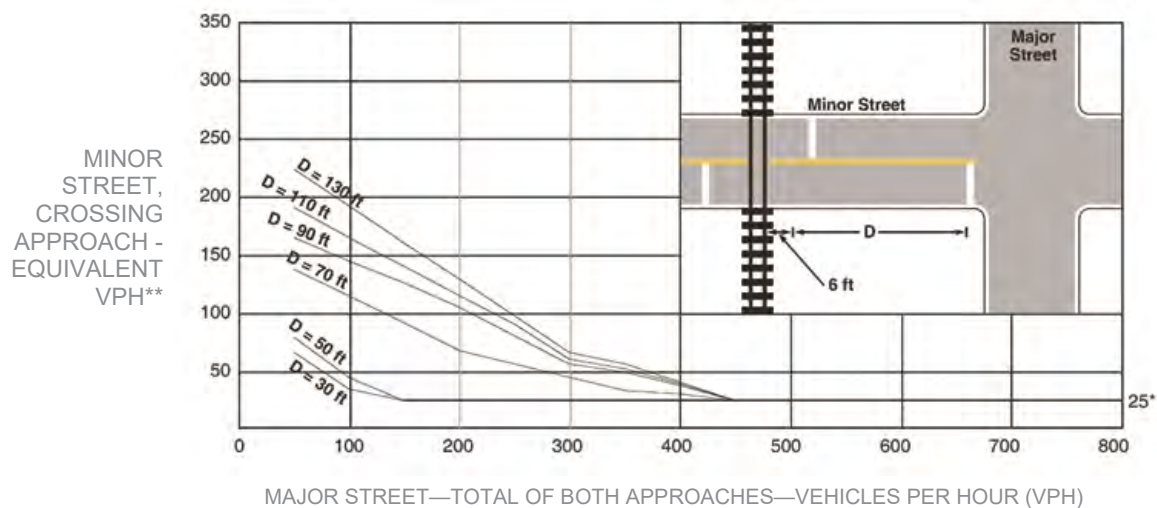
Intersection Near a Grade Crossing *(continued)*

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

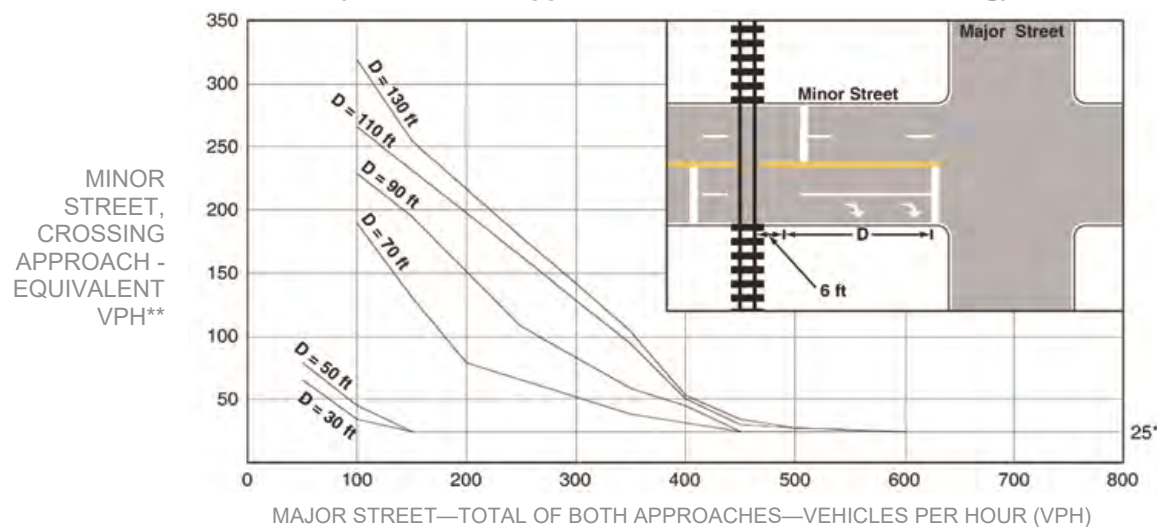
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: US 101 NB Off-Ramp

Critical Approach Speed }  or Speed Limit } 

Speed limit or critical speed on major street traffic > 40 mph..... ☐ or ☐ } RURAL (R) ☒ URBAN (U)

In built up area of isolated community of < 10,000 population..... ☐

Eight-Hour Vehicular Volume

 N/A ☒ SATISFIED YES ☐ NO ☐

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

- a. Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- b. A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- c. In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- d. 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.
- e. Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- f. 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. This 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. 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.
- g. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1468								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	131								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1468								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	131								

COMBINATION OF A & B

			SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

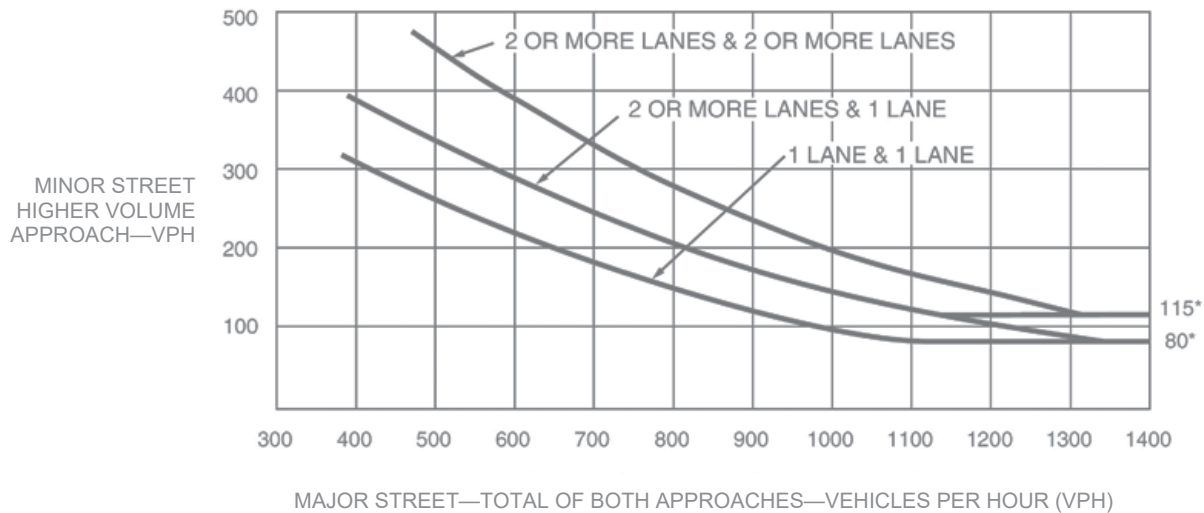
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	1468				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street		✓	131					<input type="checkbox"/>	<input type="checkbox"/>
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

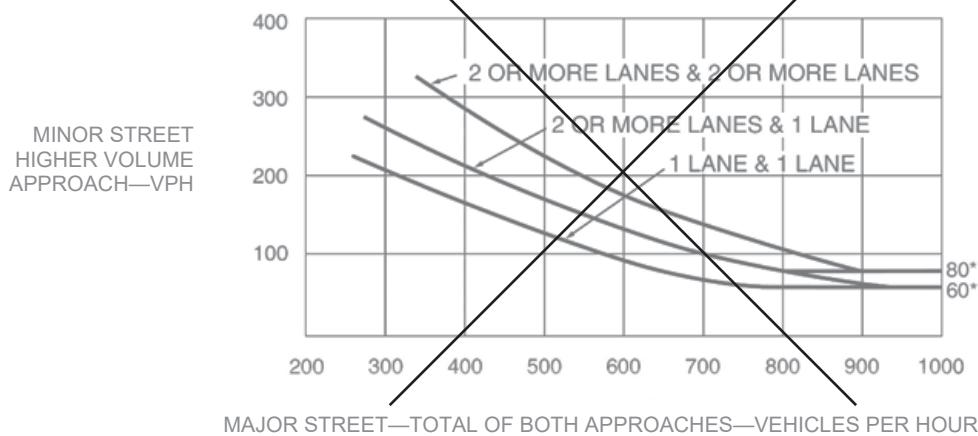
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>

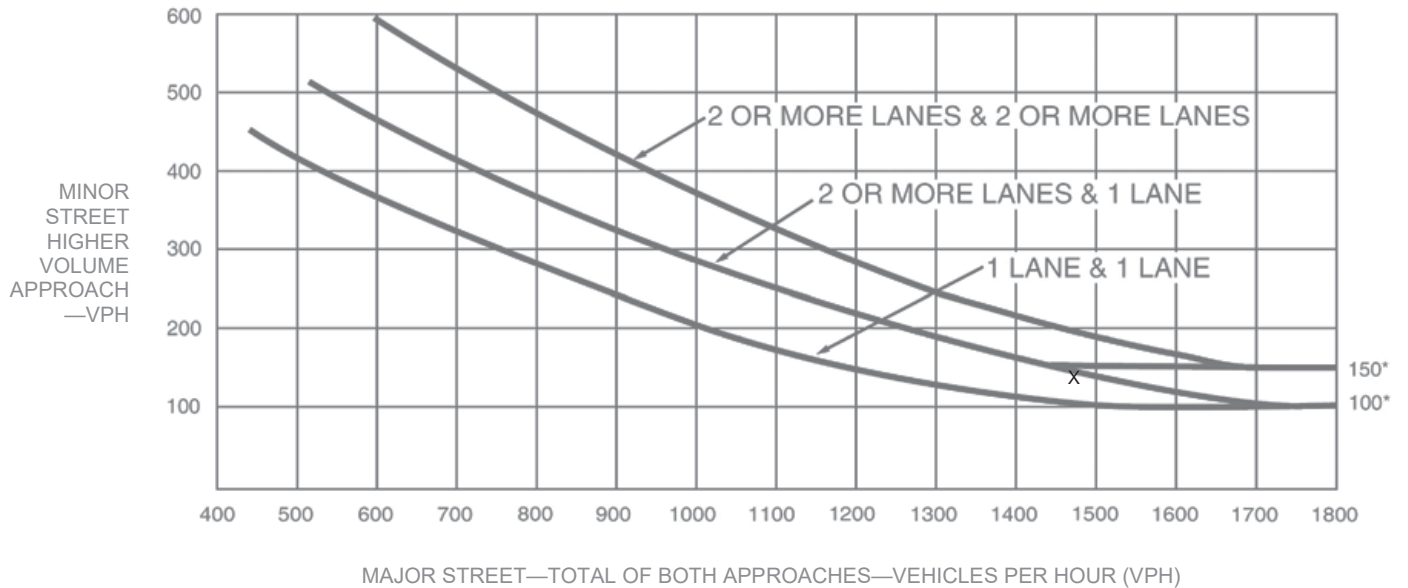
APPROACH LANES	One	2 or More	Hour	
Both Approaches - Major Street		✓	5:00 1468	
Higher Approach - Minor Street		✓	131	

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Peak Hour (continued)

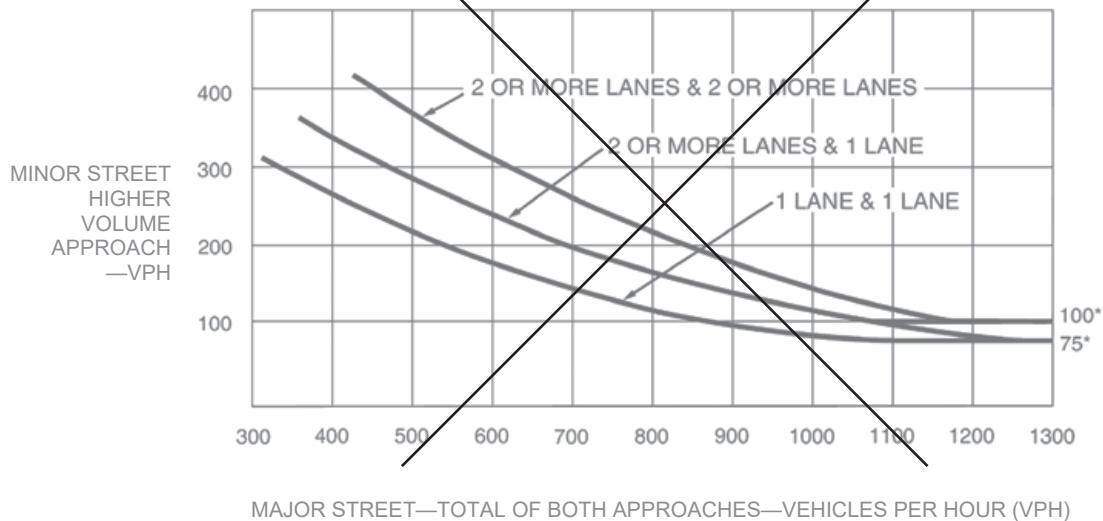
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

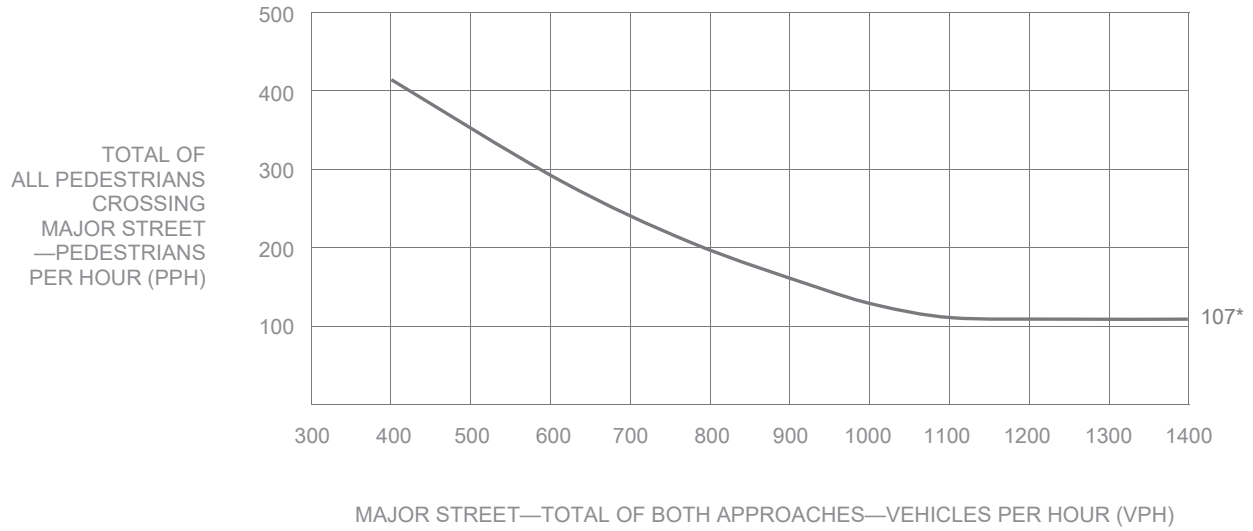
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

Pedestrian Volume *(continued)*

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

SPEED ≤ 35 MPH

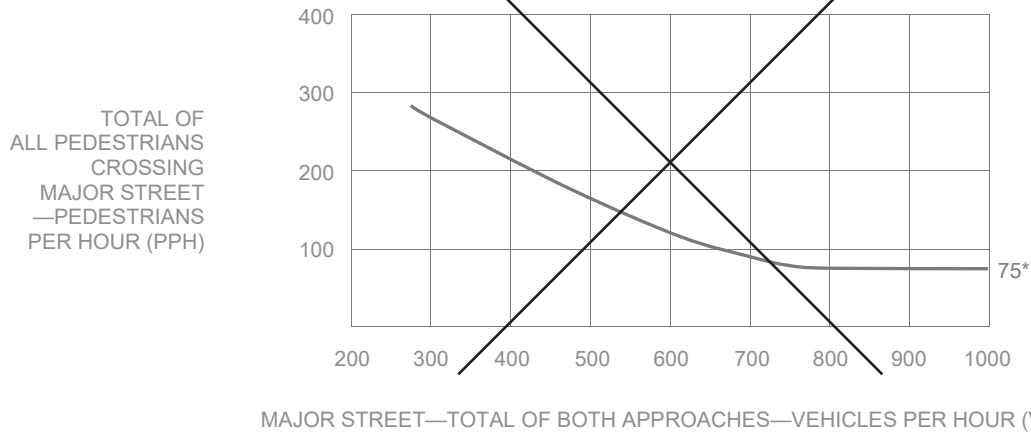
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH

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

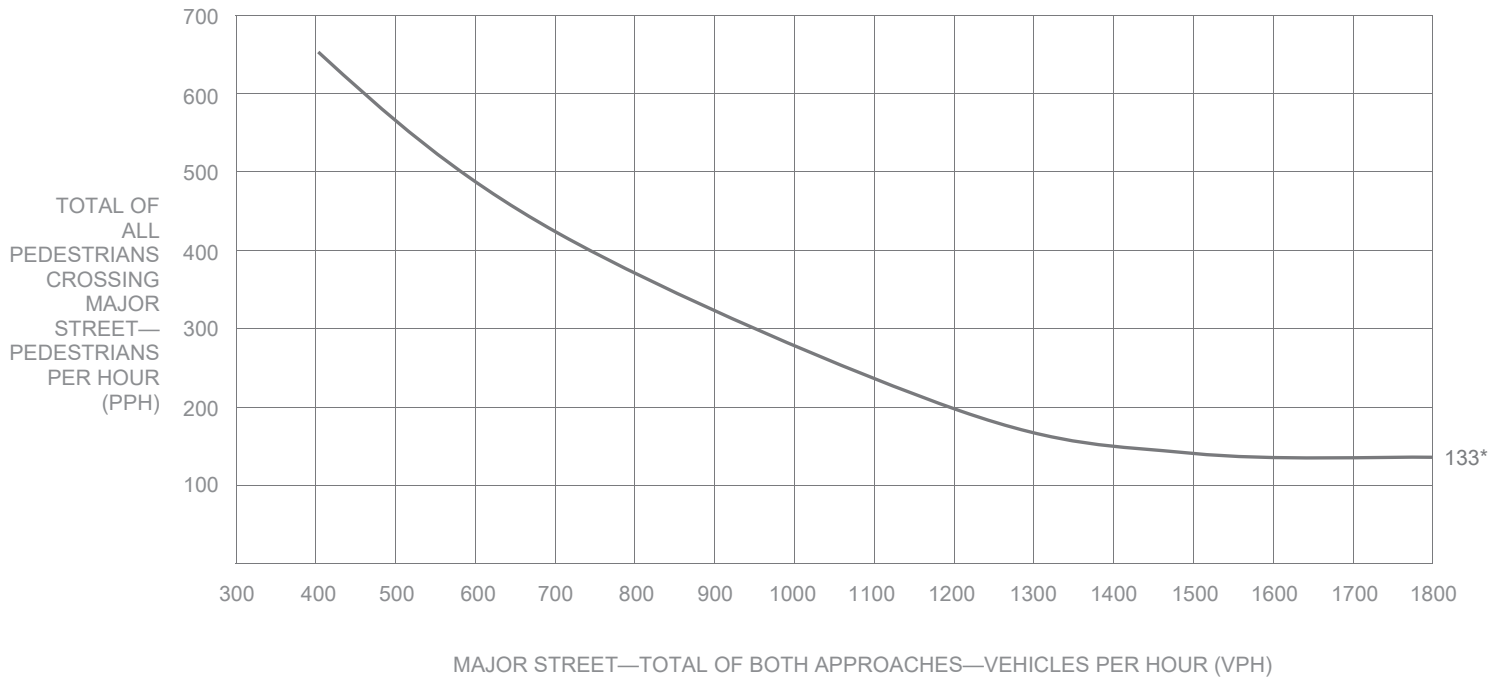


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

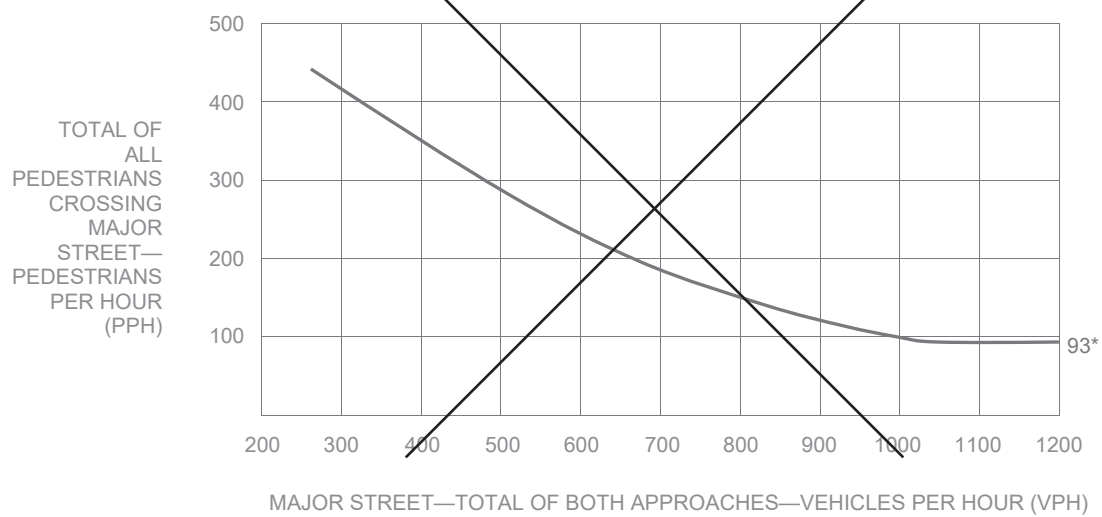
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO										
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div> </td> <td style="width: 20%;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">Number of Adequate Gaps</td> <td style="padding: 5px;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>			Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>															
	Number of Adequate Gaps															
School Age Pedestrians Crossing Street / hr																
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"></div> <div style="width: 40%; text-align: center;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;">YES</td> <td style="text-align: center; padding: 5px;">NO</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table> </div> </div>				YES	NO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
YES	NO															
<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>															
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>											

PART B		SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
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 movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		<input type="checkbox"/>

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

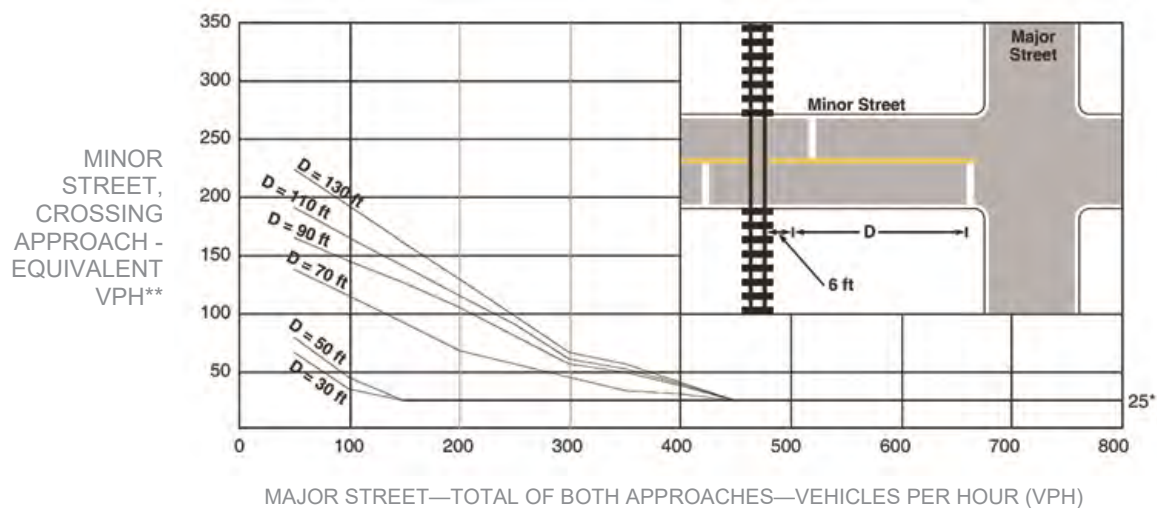
Intersection Near a Grade Crossing *(continued)*

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

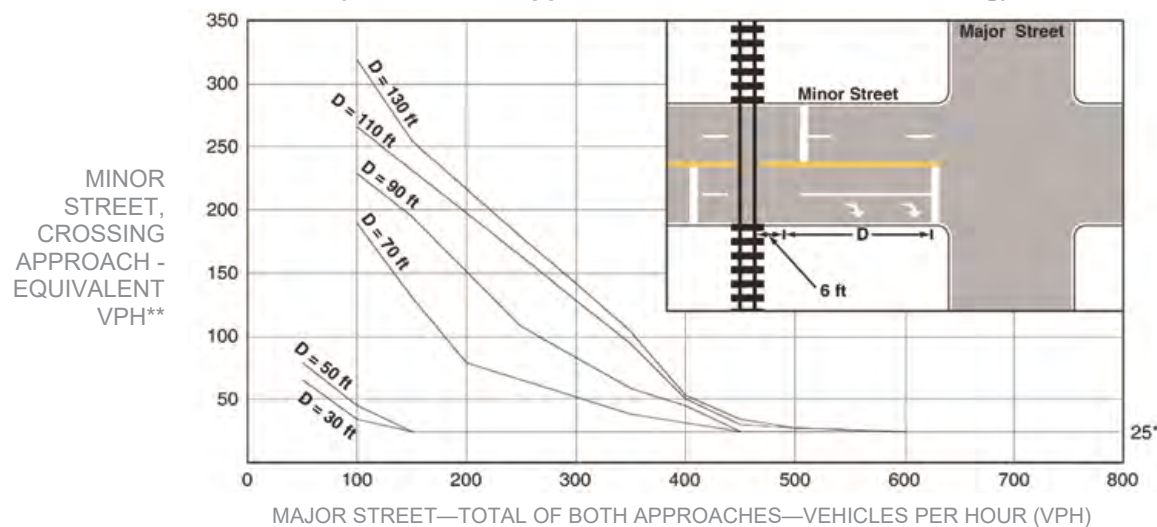
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.


PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: US 101 SB Off-Ramp

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A
Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	987								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	238								

Condition B
Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	987								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	238								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	N/A <input type="checkbox"/>	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

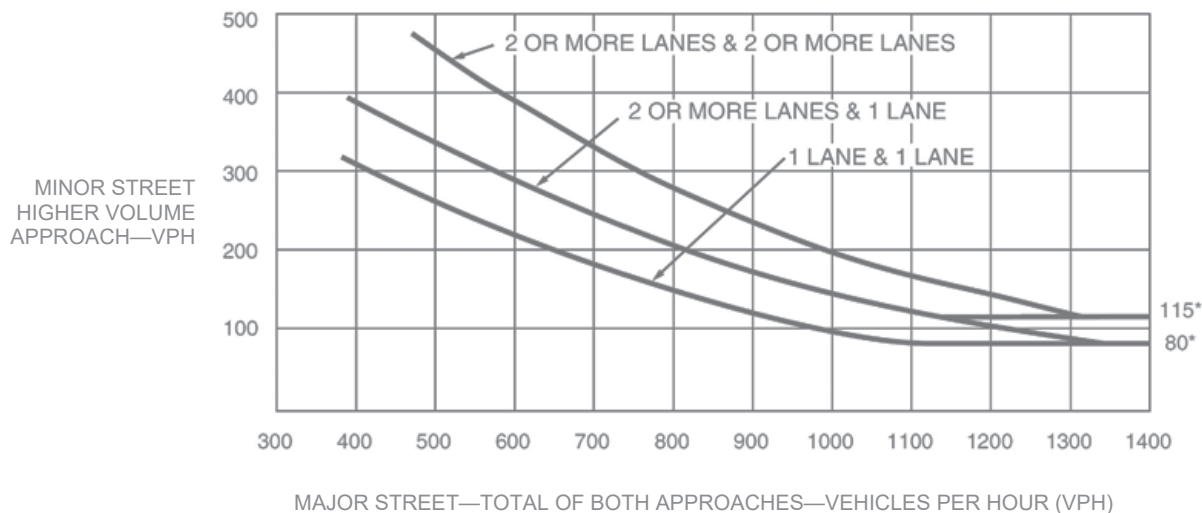
APPROACH LANES			Hours					YES	NO
	One	2 or More	08:00						
Both Approaches - Major Street		✓	987				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		238					<input type="checkbox"/>	<input type="checkbox"/>
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

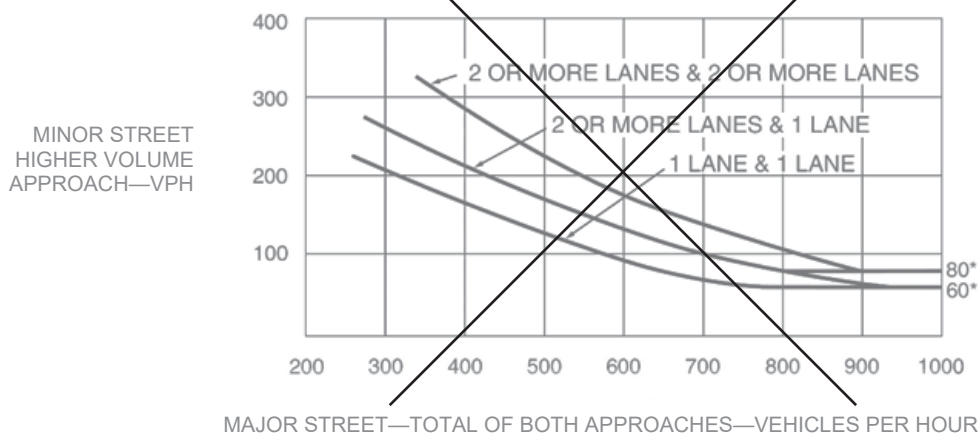
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT

3

N/A
☐

SATISFIED
YES
☒

NO
☐

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>

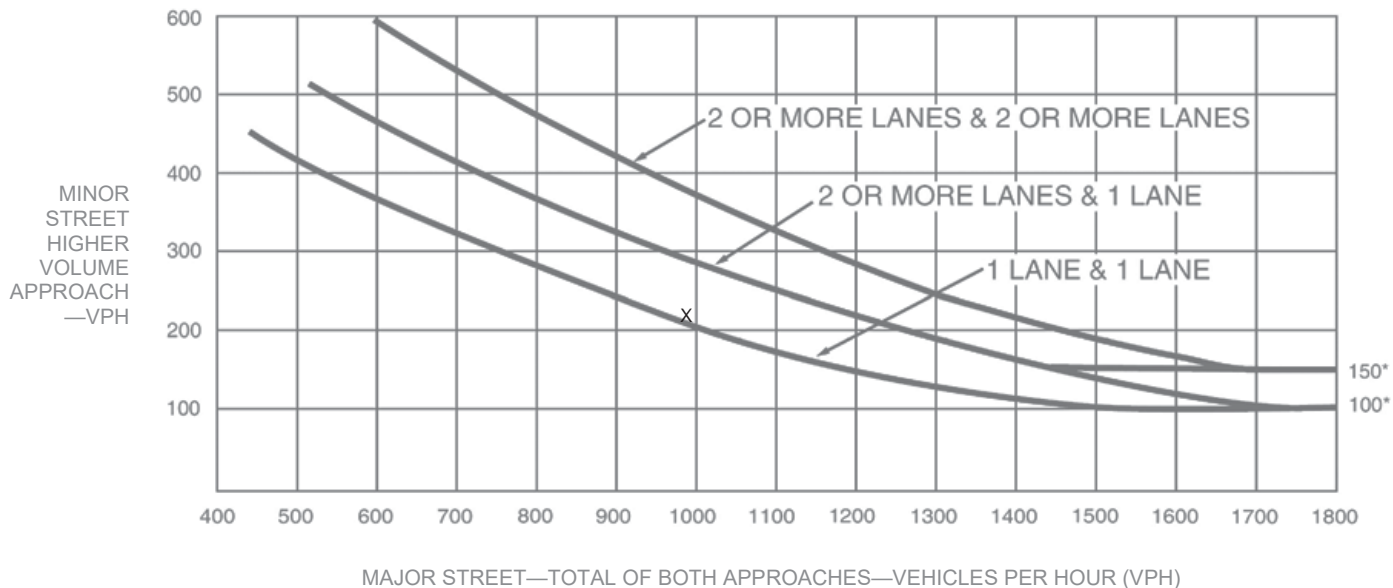
APPROACH LANES	One	2 or More	Hour	
Both Approaches - Major Street		✓	8:00	
Higher Approach - Minor Street	✓		987	
			238	

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Peak Hour (continued)

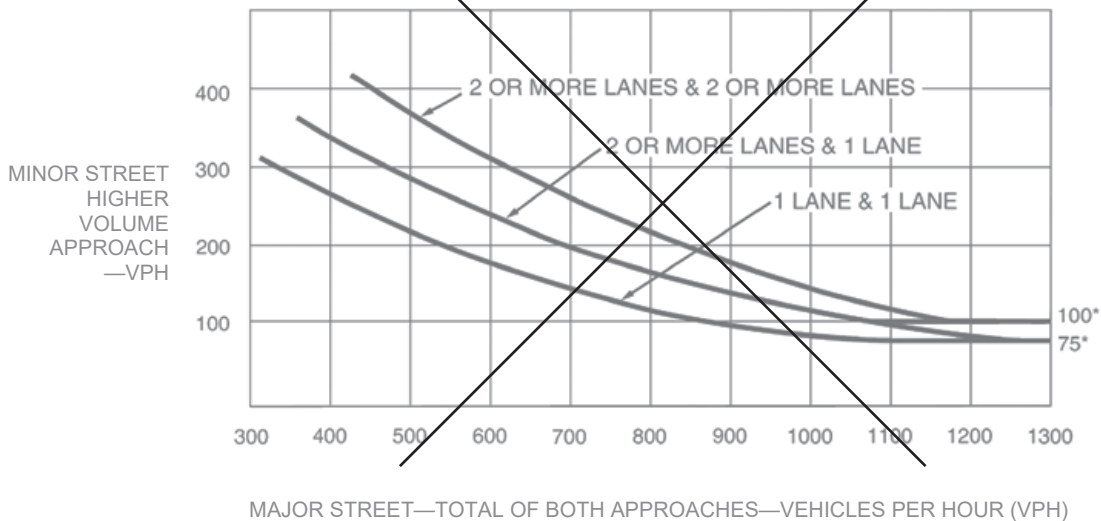
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

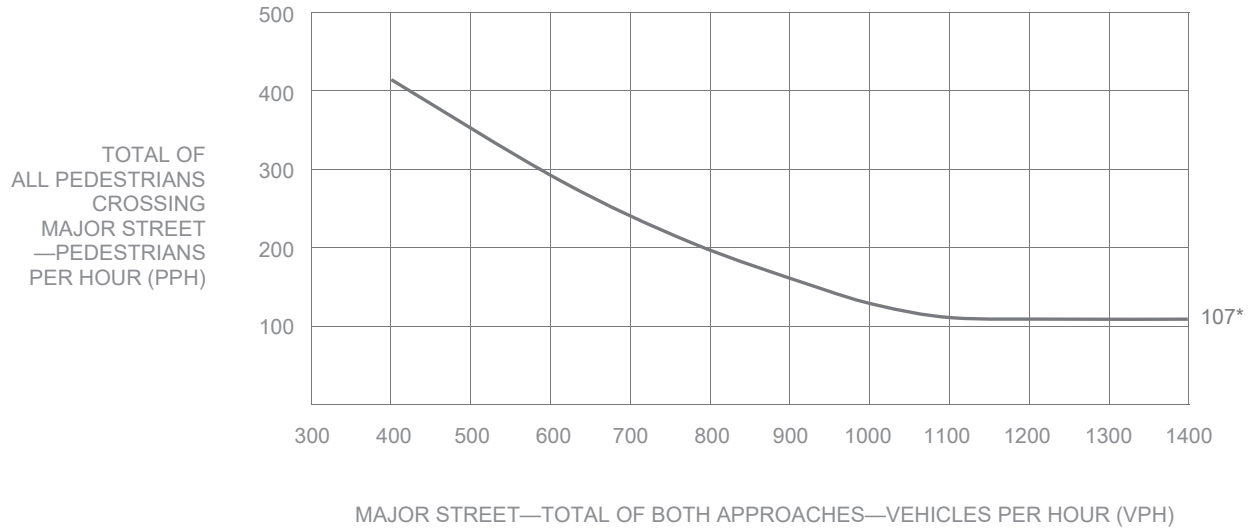
AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

Pedestrian Volume *(continued)*

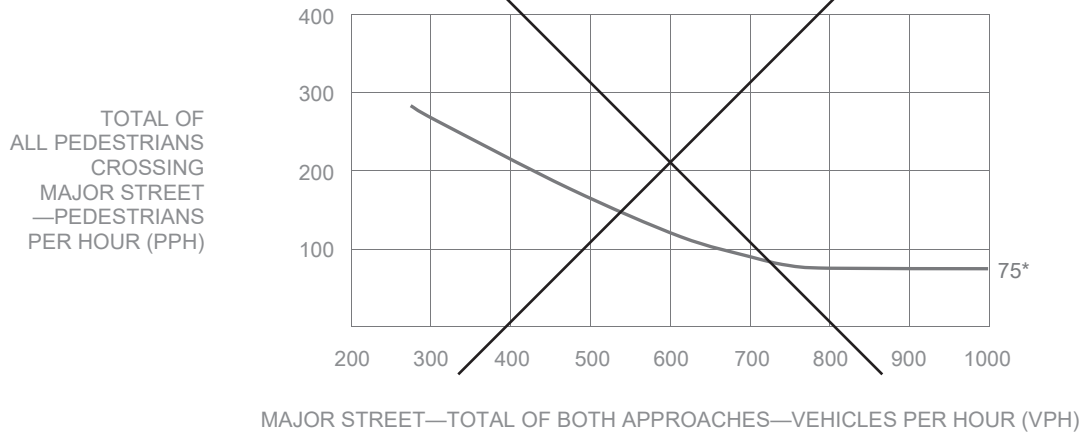
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

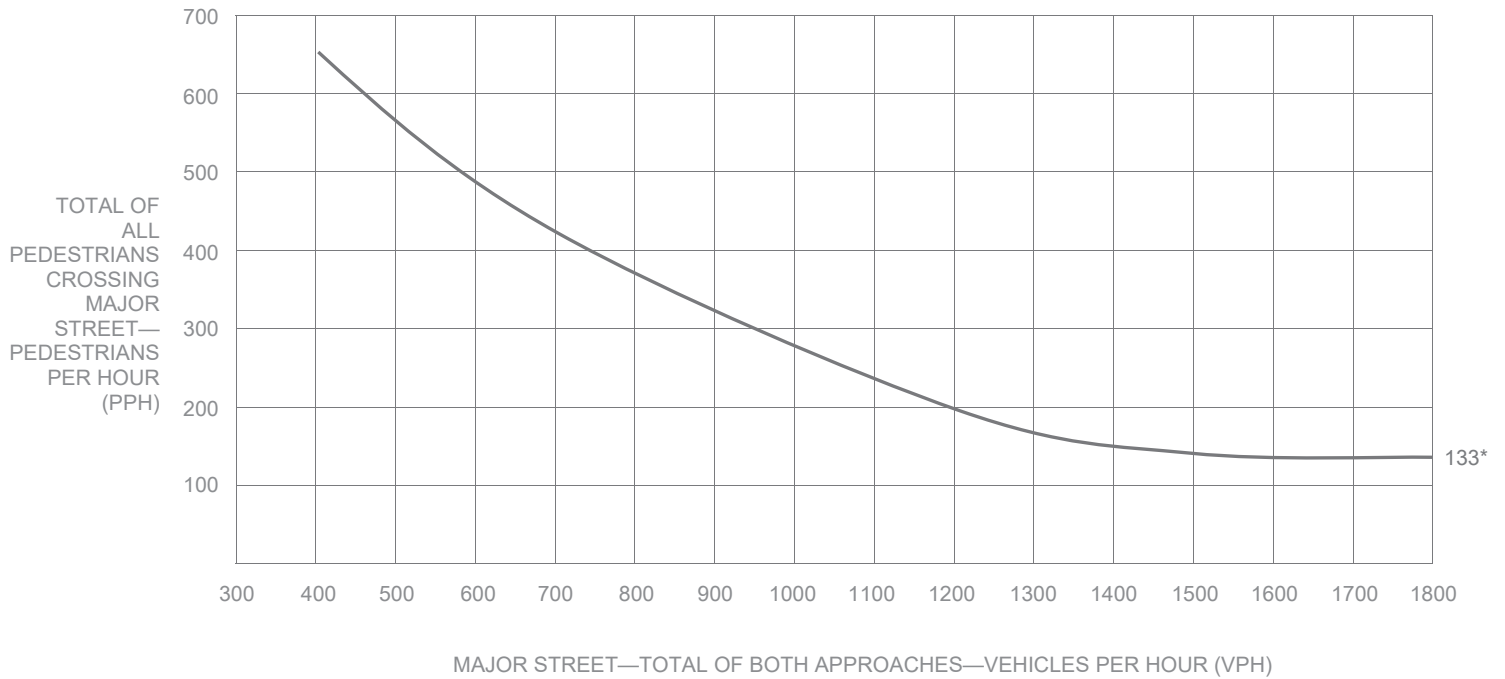


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

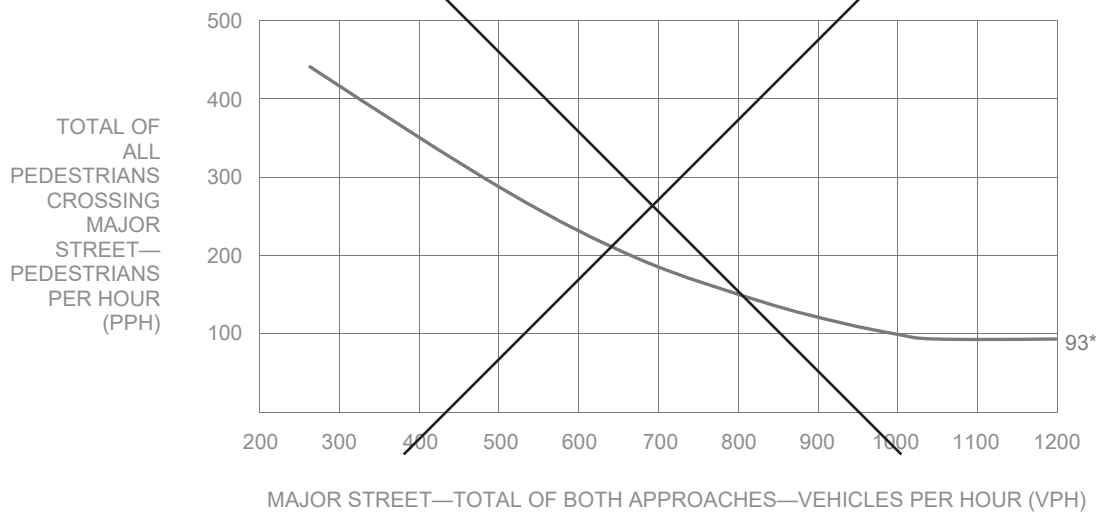
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO			
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div> </td> </tr> </table> </div> <div style="width: 40%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Minutes Children Using Crossing Number of Adequate Gaps School Age Pedestrians Crossing Street / hr </div> <div style="width: 50%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Hour</div> <div style="border: 1px solid black; padding: 5px;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div> </div>								
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>				

PART B				SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft				YES	NO	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant


N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		<input type="checkbox"/>

Roadway Network


N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

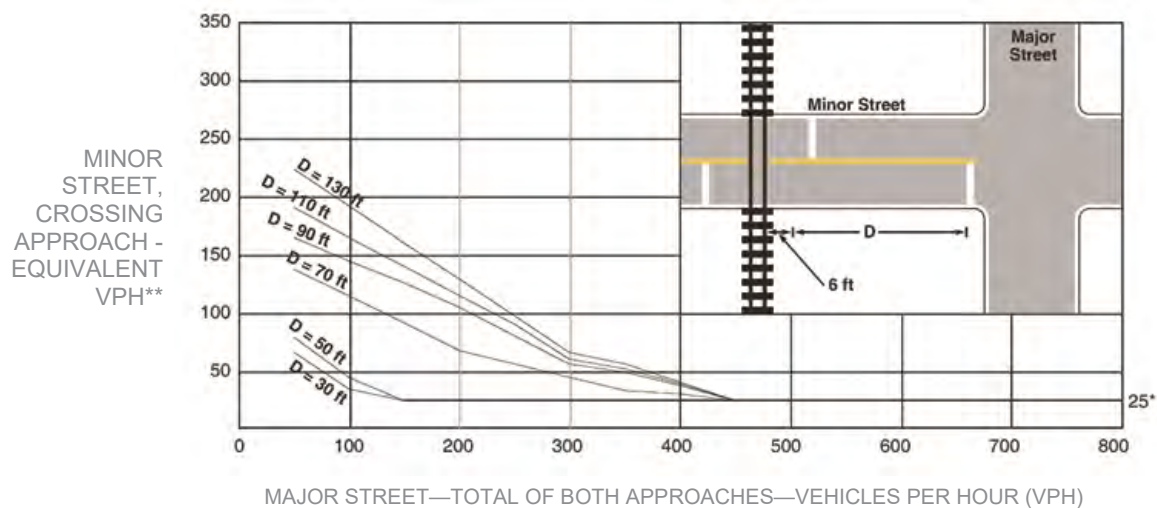
Intersection Near a Grade Crossing *(continued)*

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

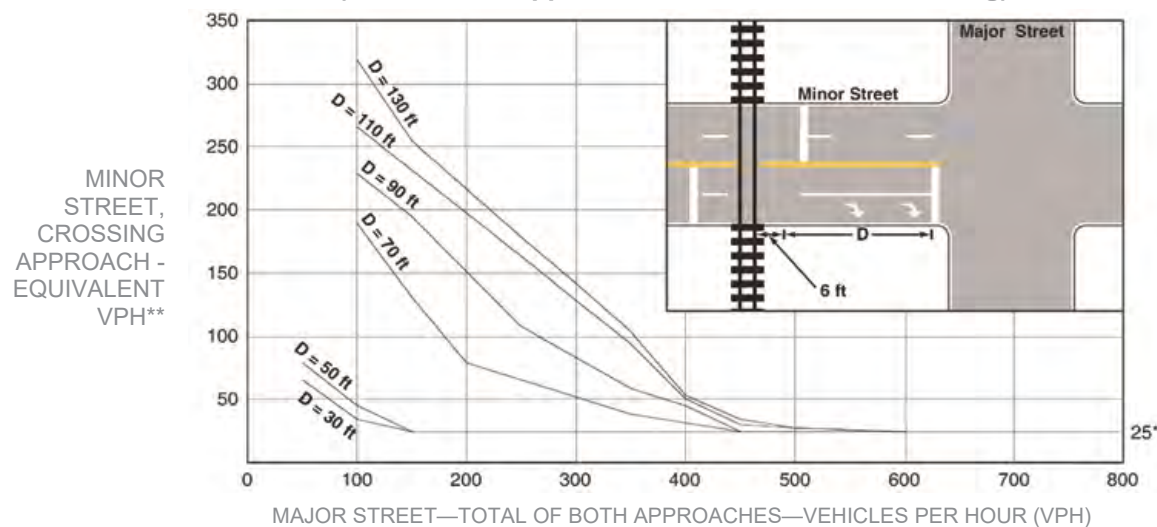
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.



PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: US 101 SB Off-Ramp

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume (continued)

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		08:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1131								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	252								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		08:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1131								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	252								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	N/A <input type="checkbox"/>	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	2 or More.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	1.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	2 or More.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	1.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

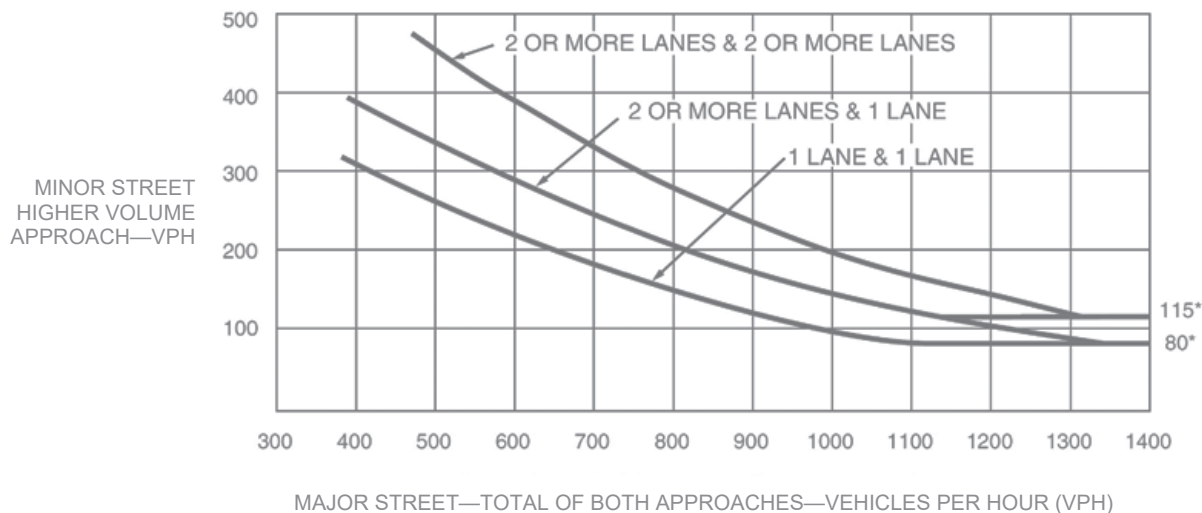
APPROACH LANES	Hours						YES	NO
	One	2 or More	08:00					
Both Approaches - Major Street		✓	1131				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		252				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

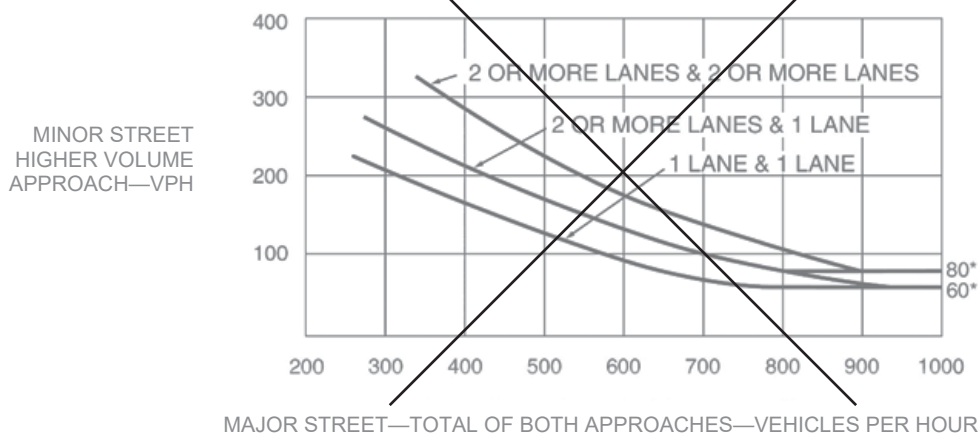
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☒

NO ☐

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
		YES	NO
		YES	NO
		YES	NO

PART B

	SATISFIED	YES	NO
		<input checked="" type="checkbox"/>	<input type="checkbox"/>
		YES	NO
		YES	NO

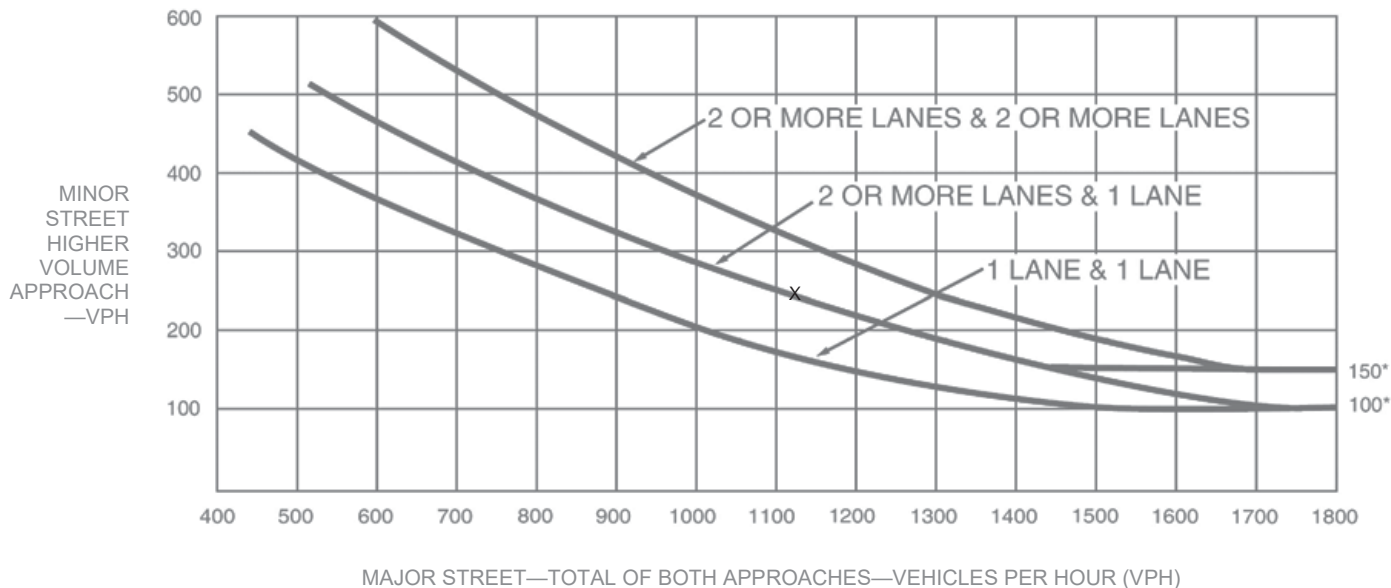
APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		✓	8:00 1131
Higher Approach - Minor Street	✓		252

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Peak Hour (continued)

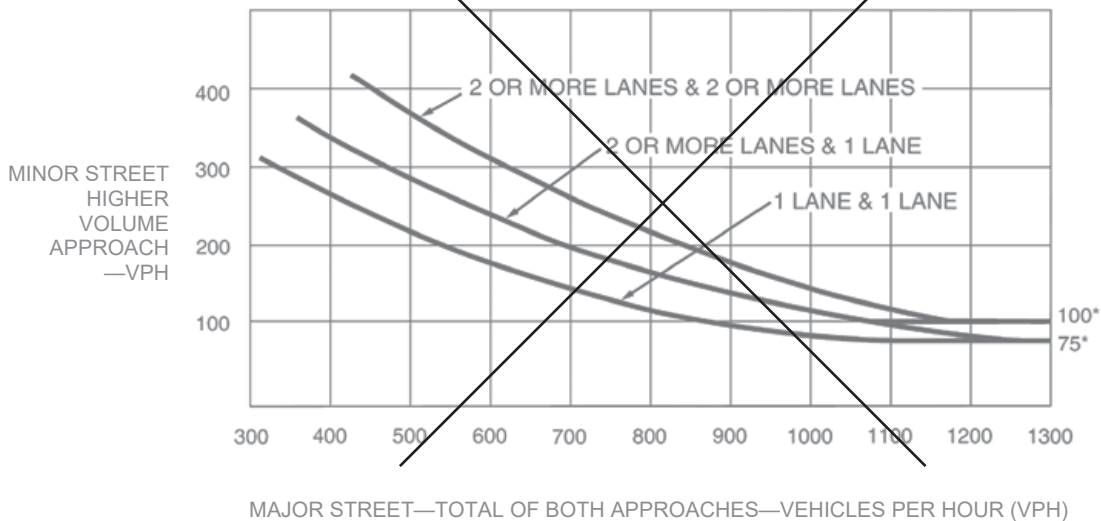
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

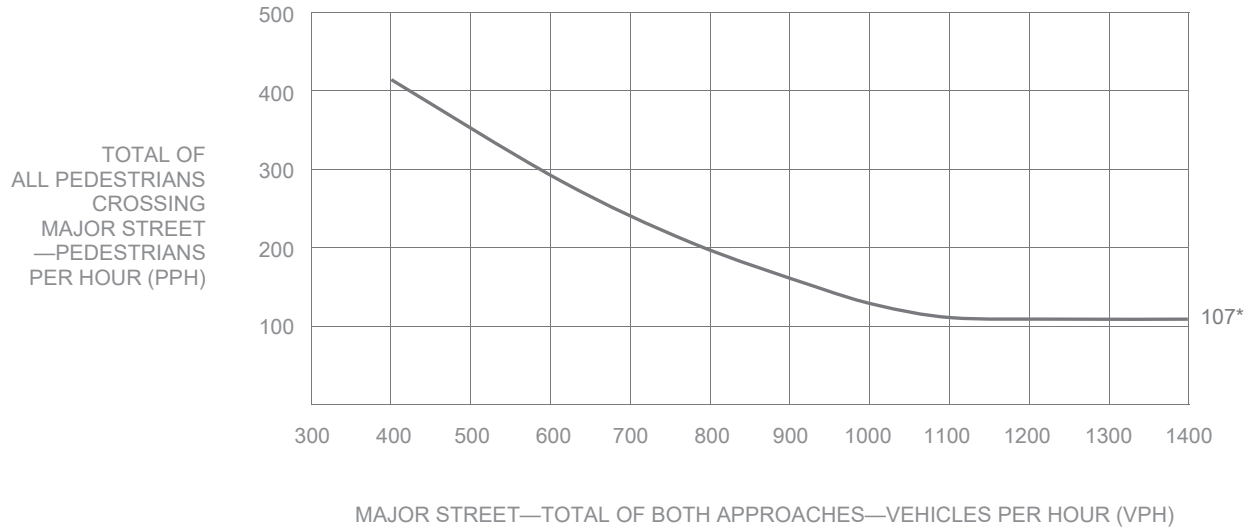
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

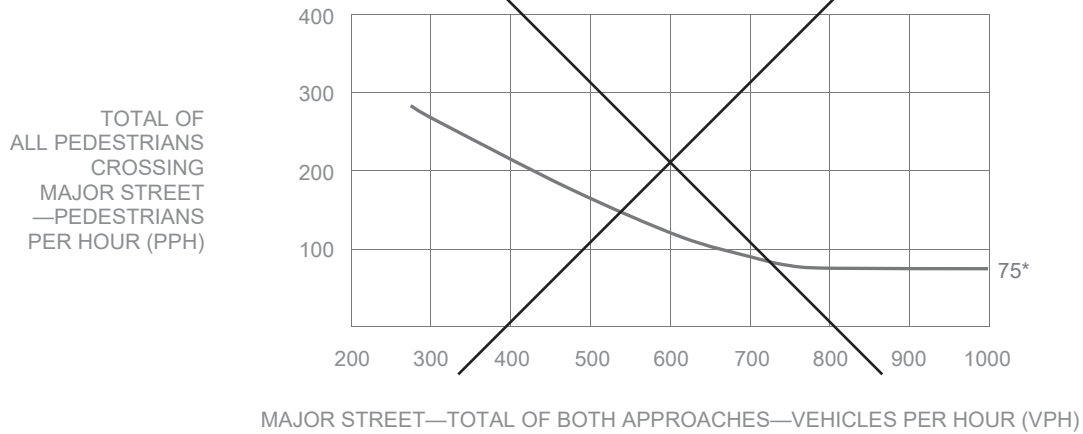
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

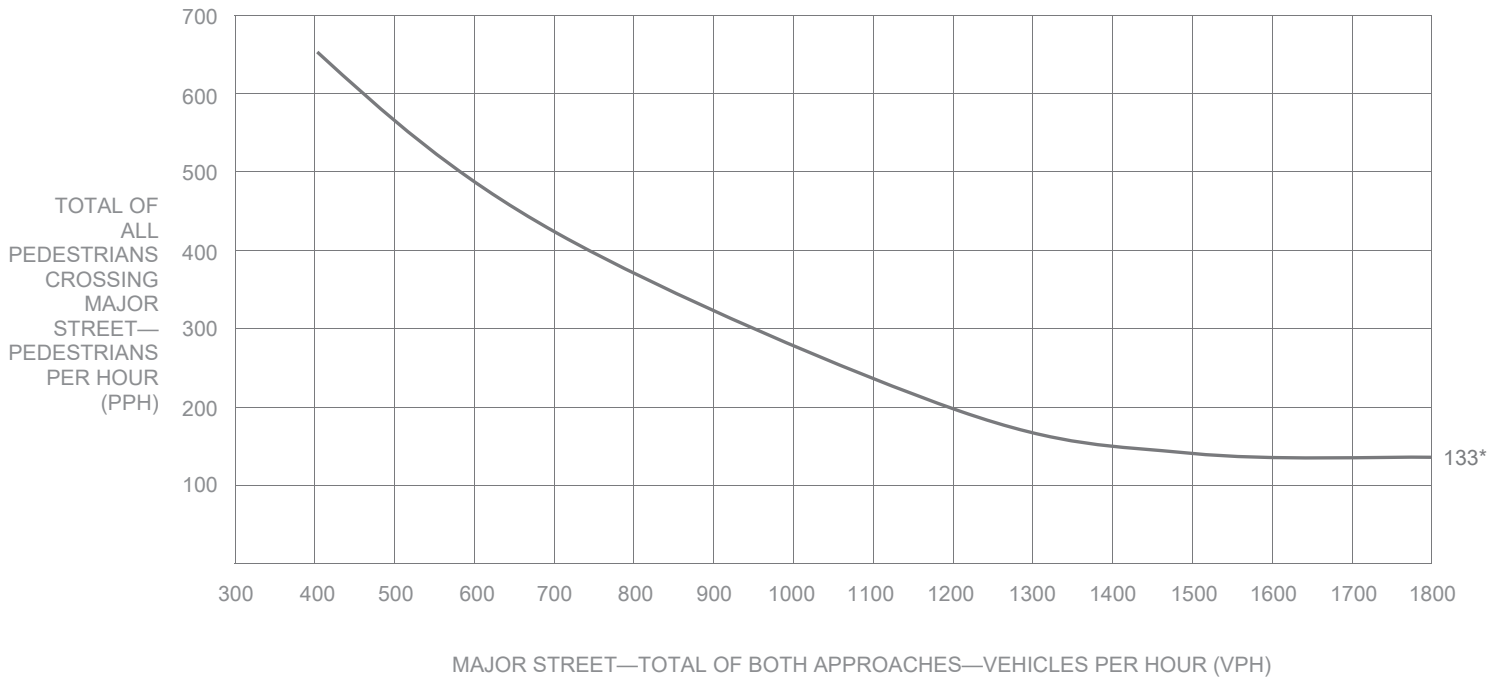


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

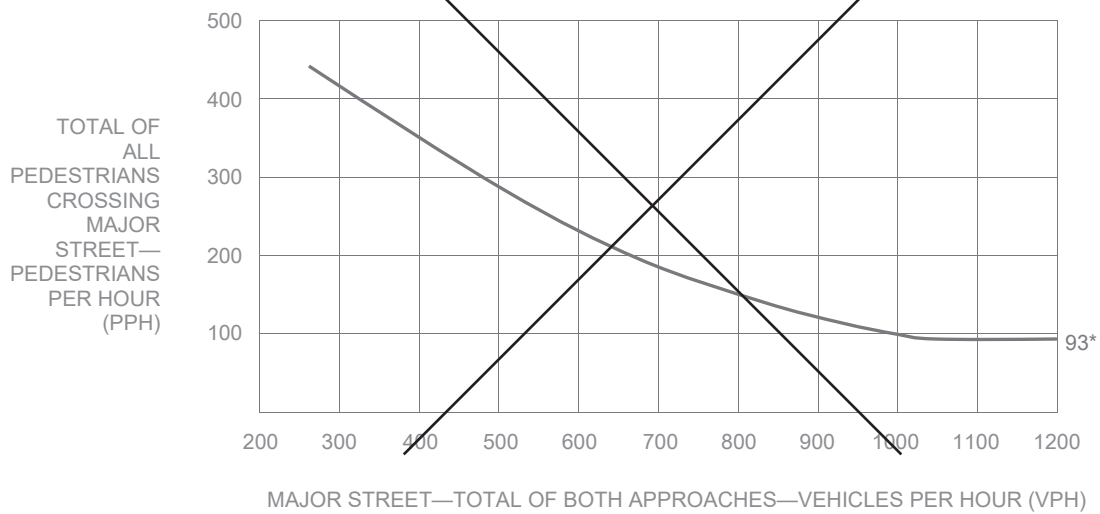
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div> </td> <td style="width: 20%;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>												
School Age Pedestrians Crossing Street / hr													
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

			YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency			<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:		<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):			
REQUIREMENTS	CONDITIONS	✓		
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume			
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8			

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

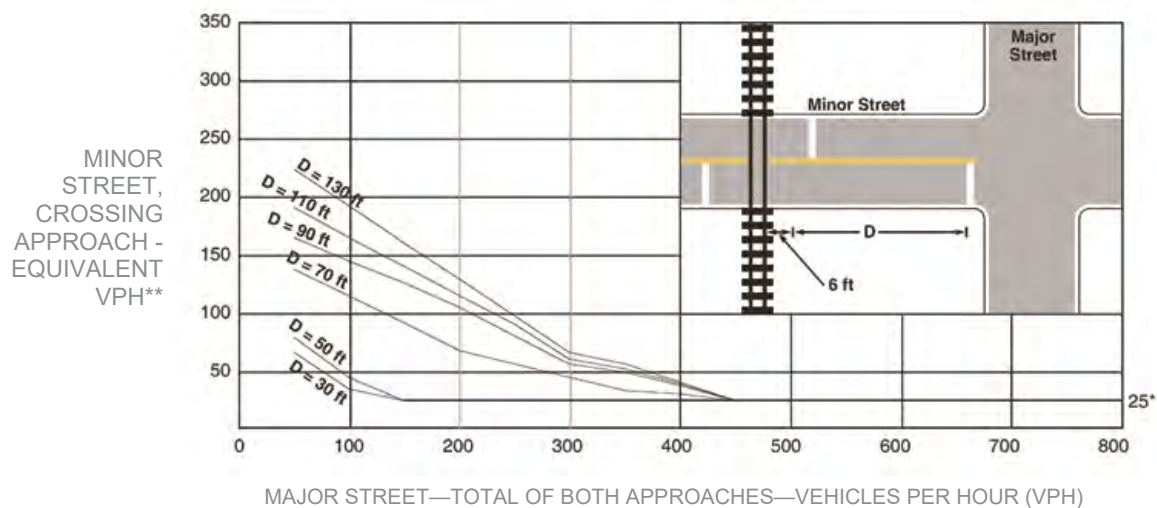
Intersection Near a Grade Crossing *(continued)*

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

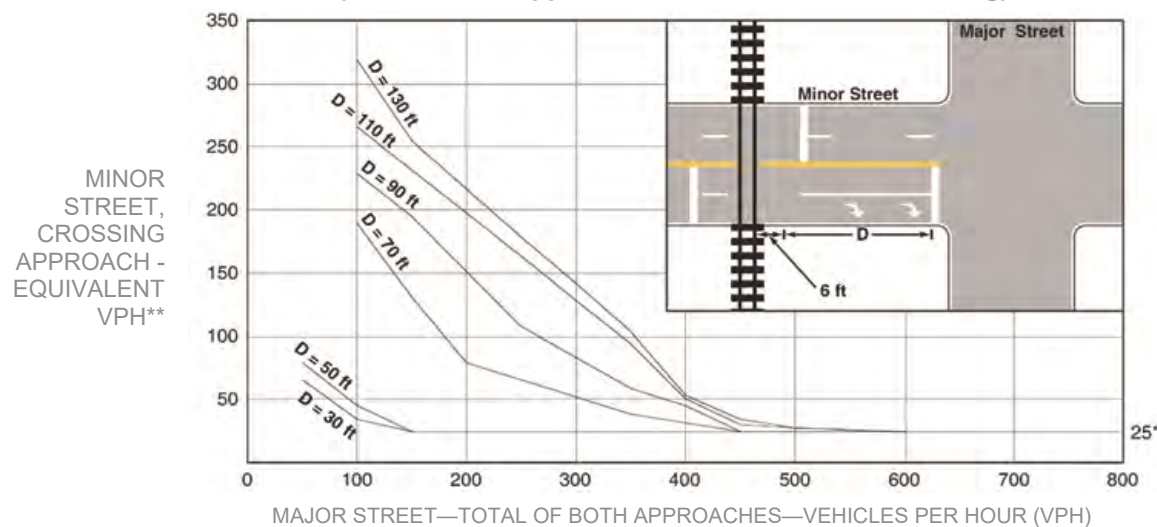
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.


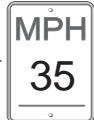
PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: Yucca Street

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1438								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	44								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1438								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	44								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	N/A	<input type="checkbox"/>
		YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

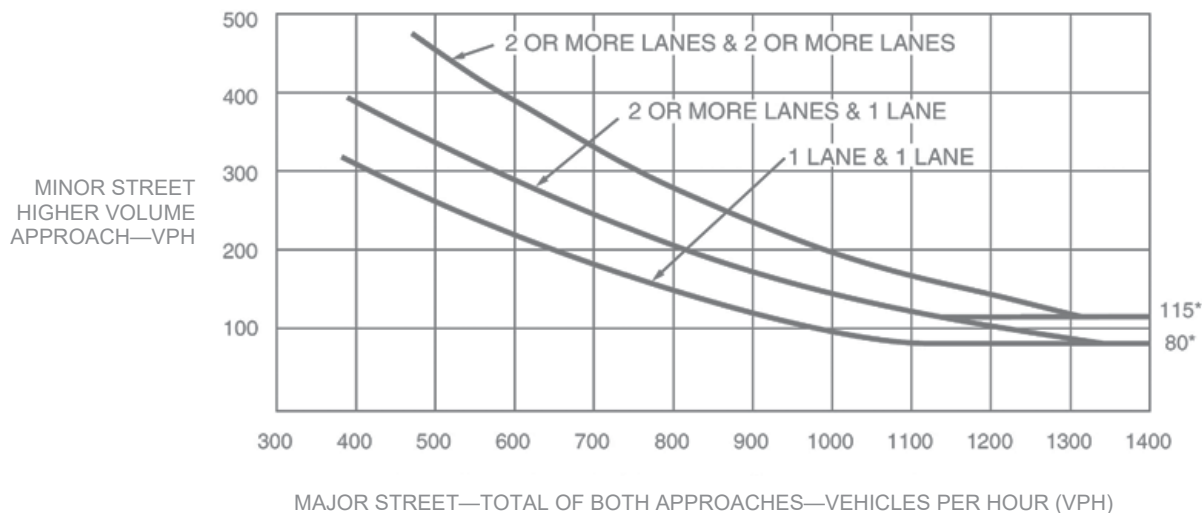
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	1438				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		44				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

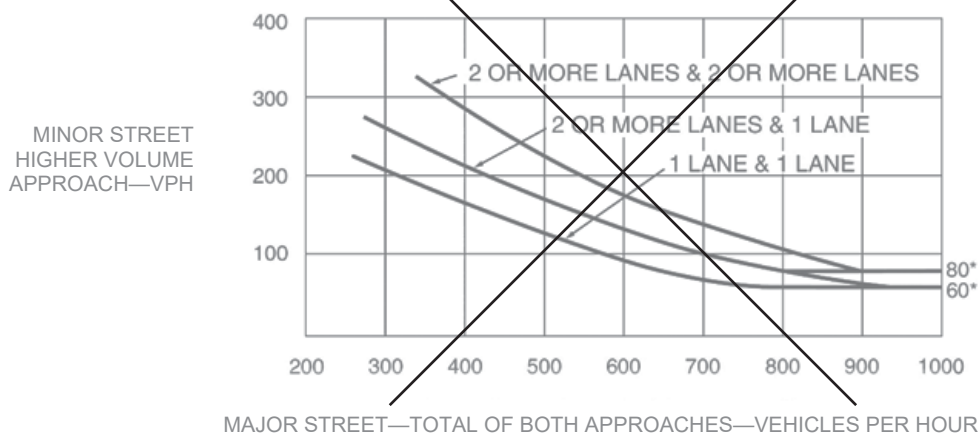
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	YES	NO	N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

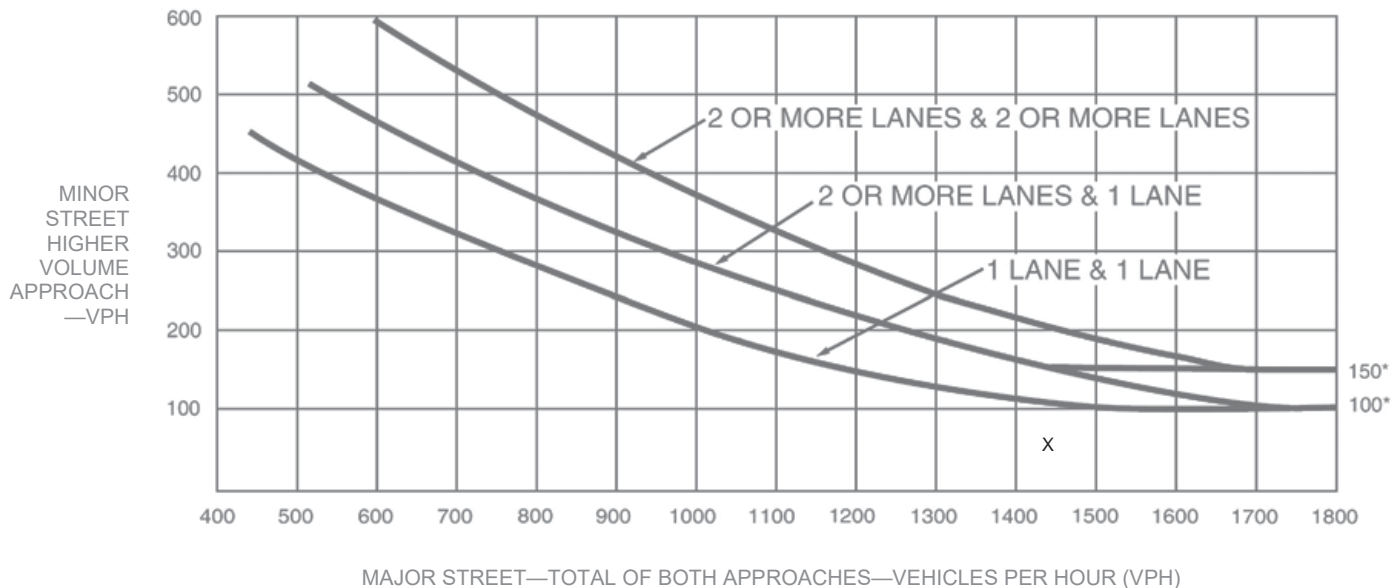
			Hour
APPROACH LANES	One	2 or More	5:00
Both Approaches - Major Street		✓	1438
Higher Approach - Minor Street	✓		44

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)		

Peak Hour (continued)

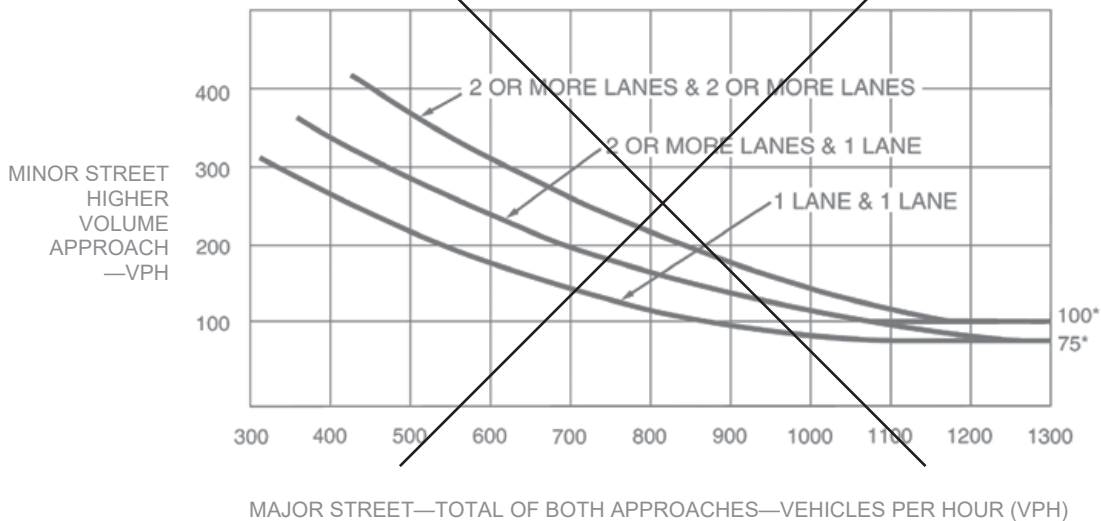
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

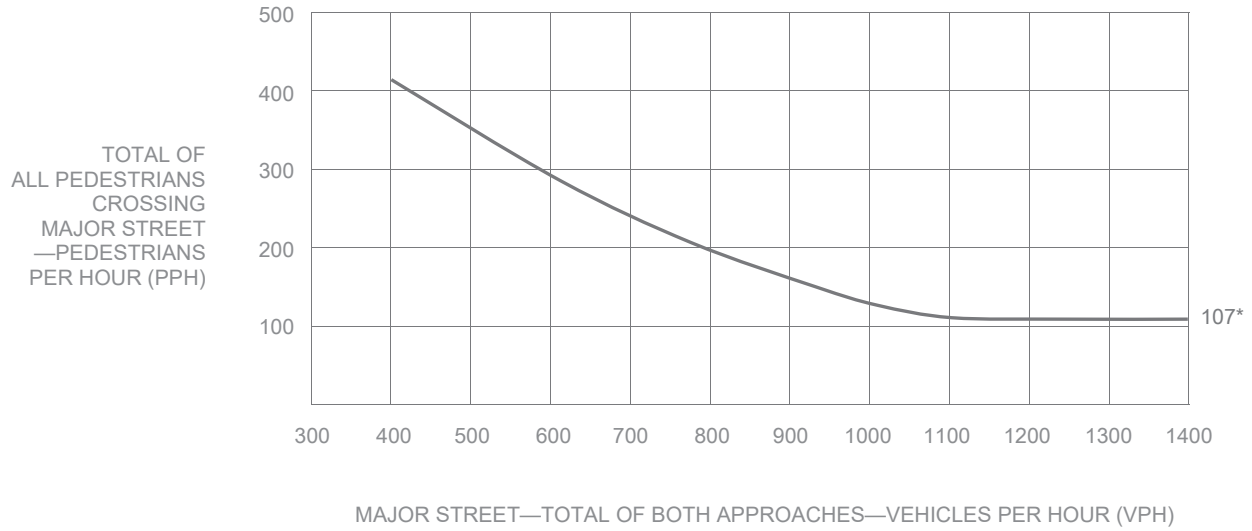
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

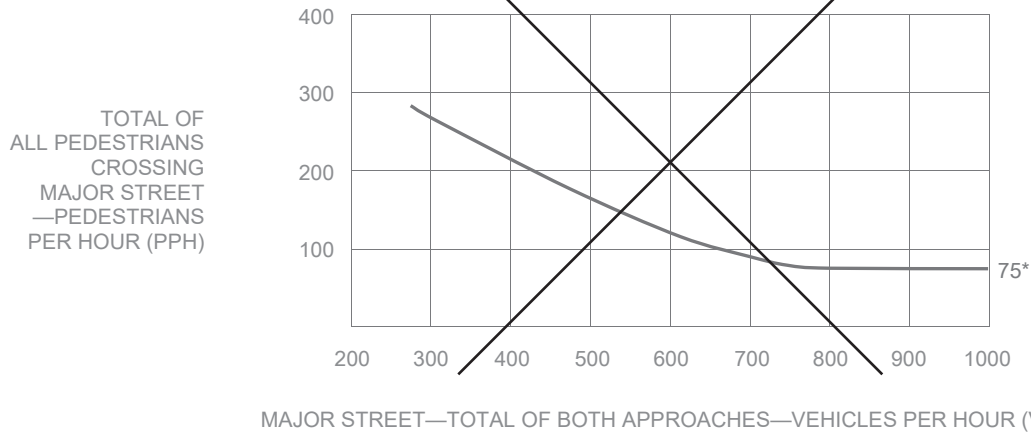
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

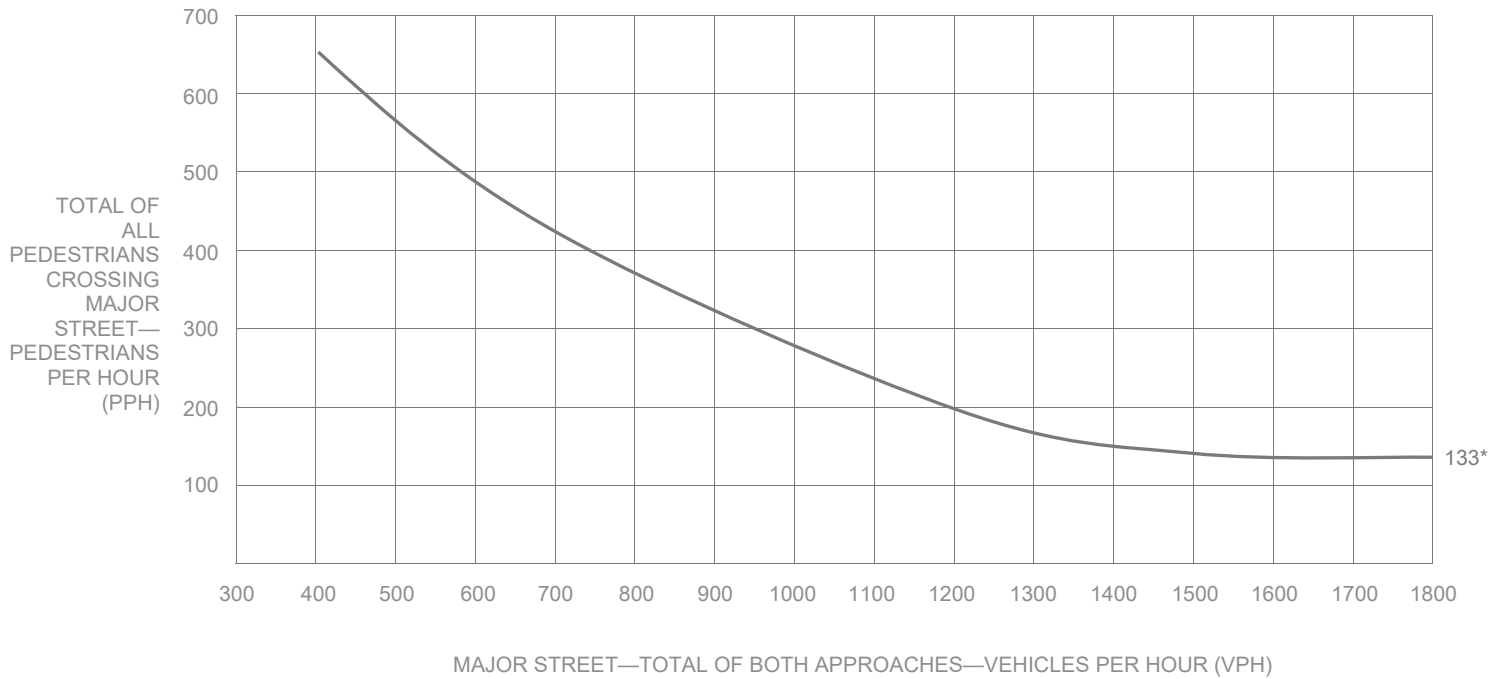


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

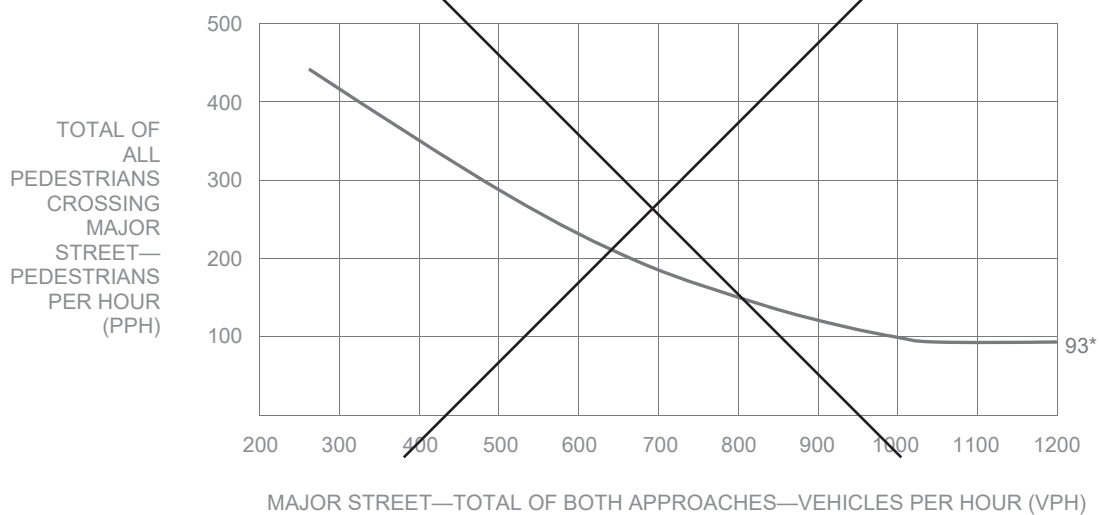
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED		YES	NO
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Gap / Minutes and # of Children </div> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> Hour </div> </div>				<div style="display: flex; justify-content: space-around;"> YES NO </div>			
Gaps vs Minutes	Minutes Children Using Crossing			Gaps < Minutes	<input type="checkbox"/>	<input type="checkbox"/>	
	Number of Adequate Gaps			<u>AND</u> Children ≥ 20/hr	<input type="checkbox"/>	<input type="checkbox"/>	
School Age Pedestrians Crossing Street / hr							
<u>AND</u> , Consideration has been given to less restrictive remedial measures					<input type="checkbox"/>	<input type="checkbox"/>	

PART B		SATISFIED		YES	NO
		<div style="display: flex; justify-content: space-around;"> YES NO </div>			
The distance to the nearest traffic signal along the major street is greater than 300 ft		<input type="checkbox"/>	<input type="checkbox"/>		
<u>OR</u> , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , 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.			

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		<input checked="" type="checkbox"/>	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

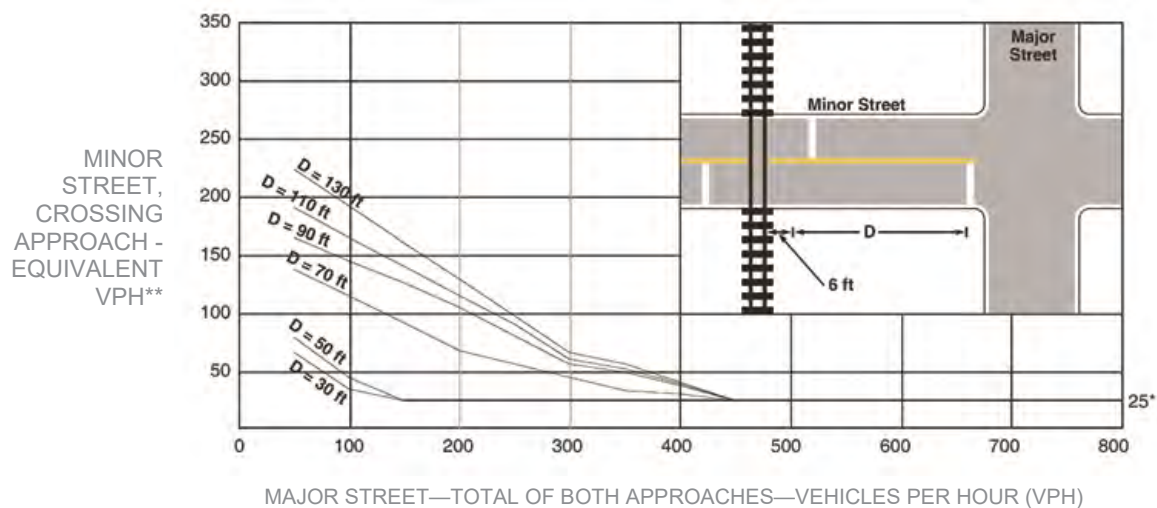
Intersection Near a Grade Crossing *(continued)*

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

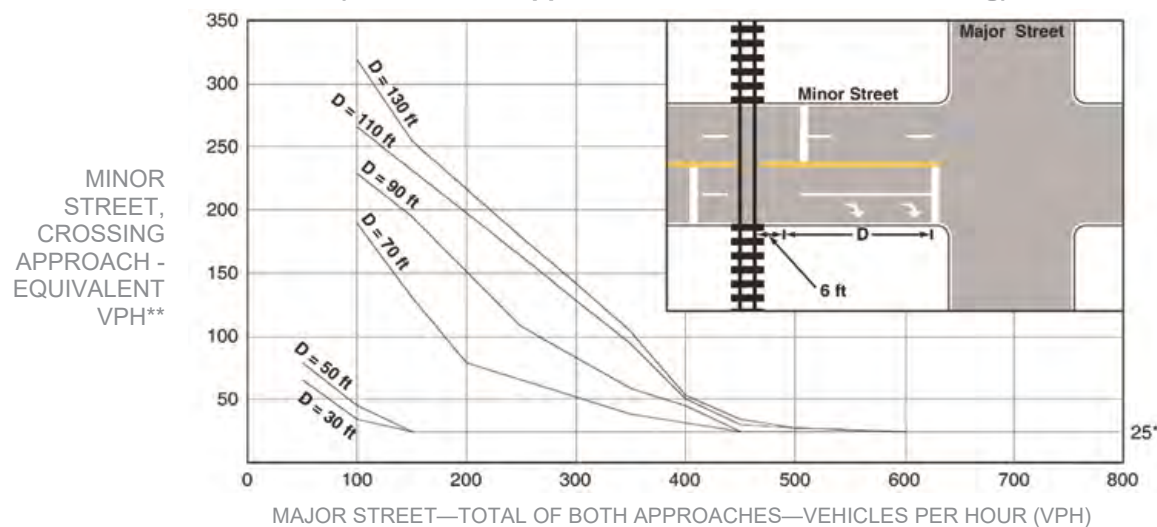
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
AND				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
OR GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.


PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Gower Street

MINOR ST: Yucca Street

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume (continued)

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input checked="" type="checkbox"/> 100 %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1730								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	47								

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>
					RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) <input type="checkbox"/> ____ %		

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					Hours								
	U	R	U	R									
APPROACH LANES	1		2 or More		05:00								
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1730								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	47								

COMBINATION OF A & B

			SATISFIED	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	1.....	1.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	1.....	1.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

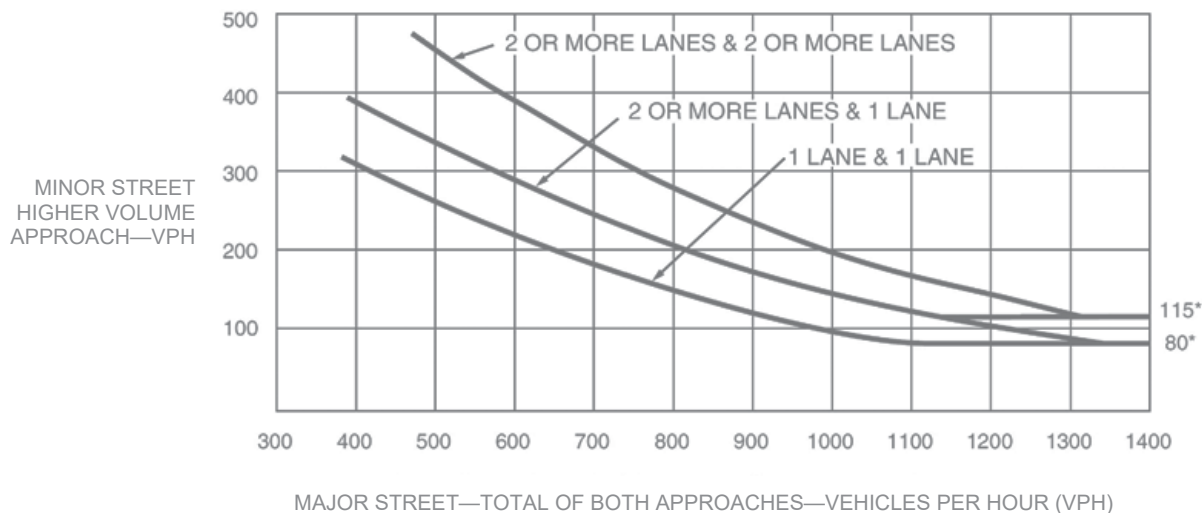
APPROACH LANES			Hours				YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	1730				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		47				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

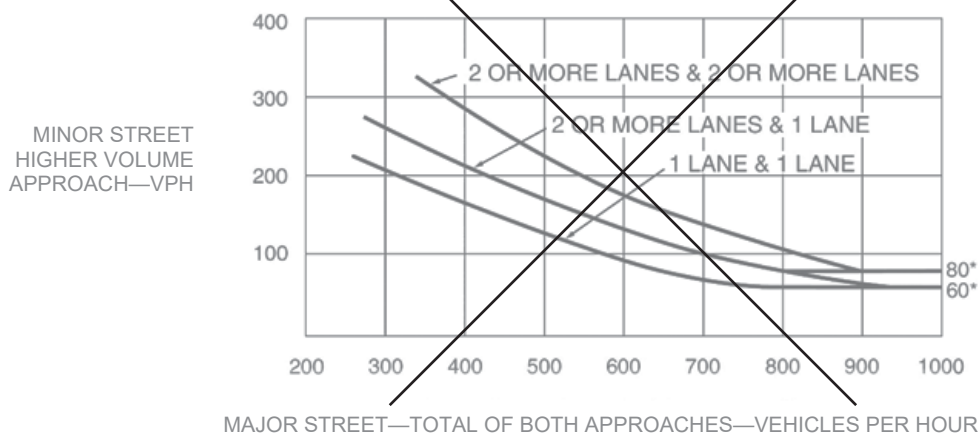
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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



*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.

Peak Hour

WARRANT
3

N/A ☐

SATISFIED YES ☐

NO ☒

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

- a. Part A or Part B must be satisfied.
- b. In applying each condition, the major street and minor street volumes shall be for the same hours.
- c. 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.
- d. Estimated Peak Hour Volumes may be used for new intersections, significantly reconstructed intersections, or where near-term land development will result in increased volumes.
- e. 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. This 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. 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.
- f. 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

PART A

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

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		YES	NO
			N/A
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <u>AND</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART B

	SATISFIED	YES	NO
		<input type="checkbox"/>	<input checked="" type="checkbox"/>

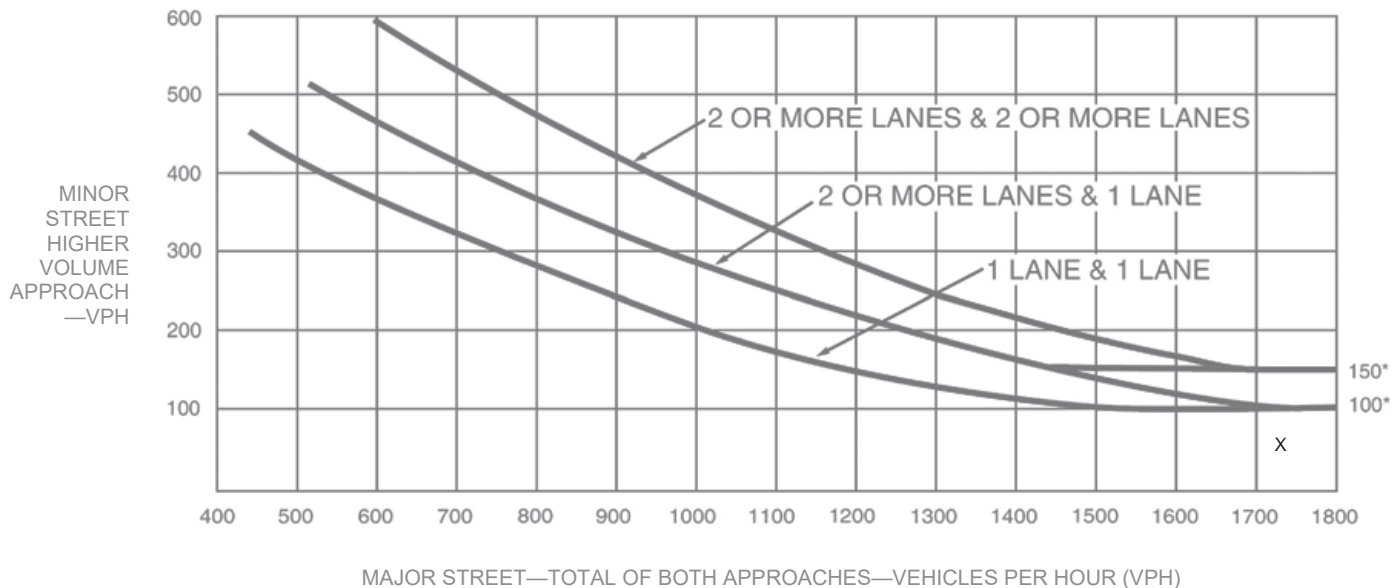
APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		✓	5:00 1730
Higher Approach - Minor Street	✓		47

	YES	NO
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)		

Peak Hour (continued)

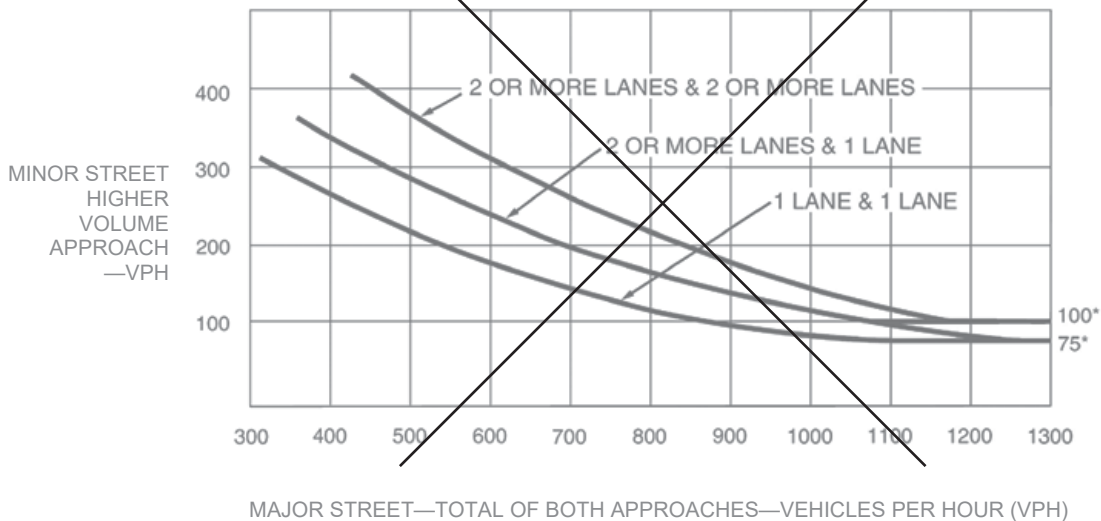
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

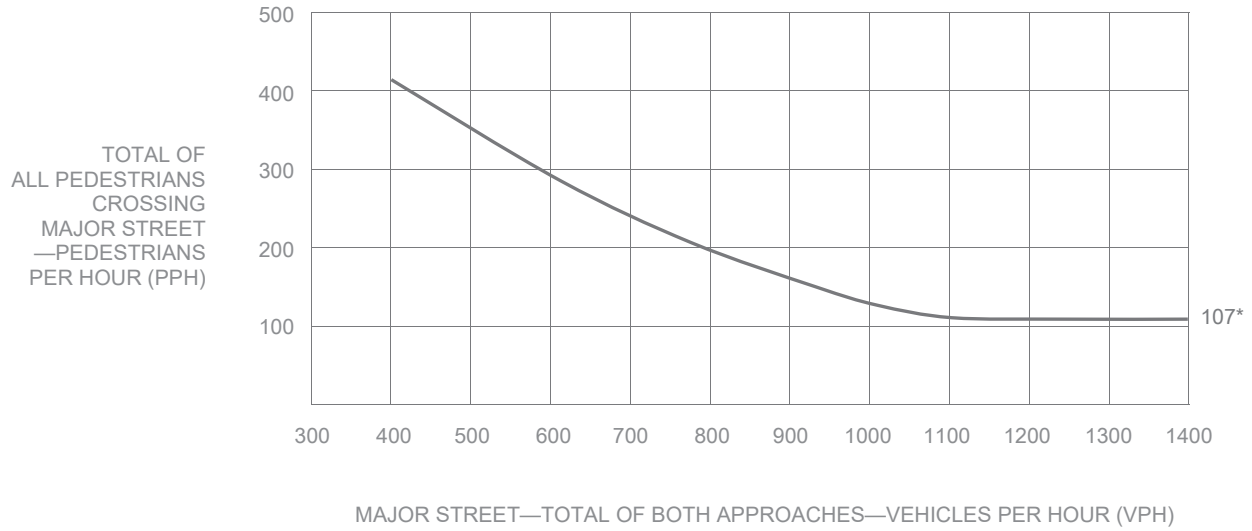
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

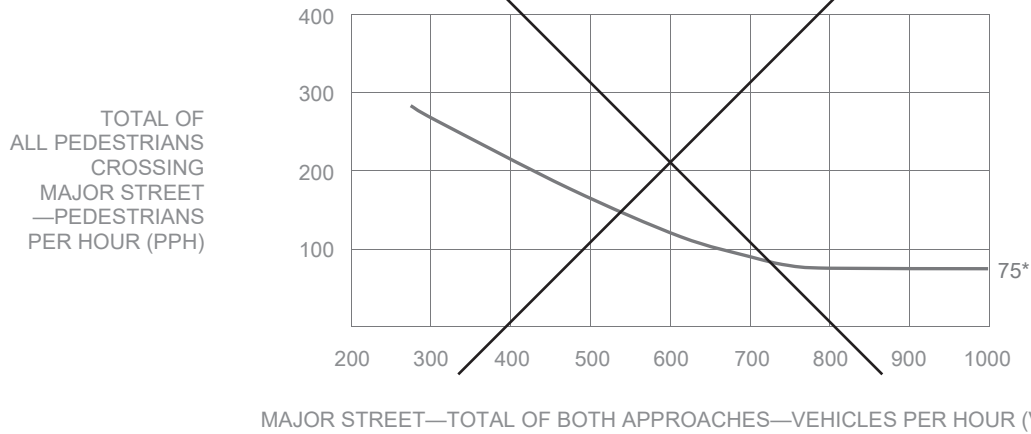
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

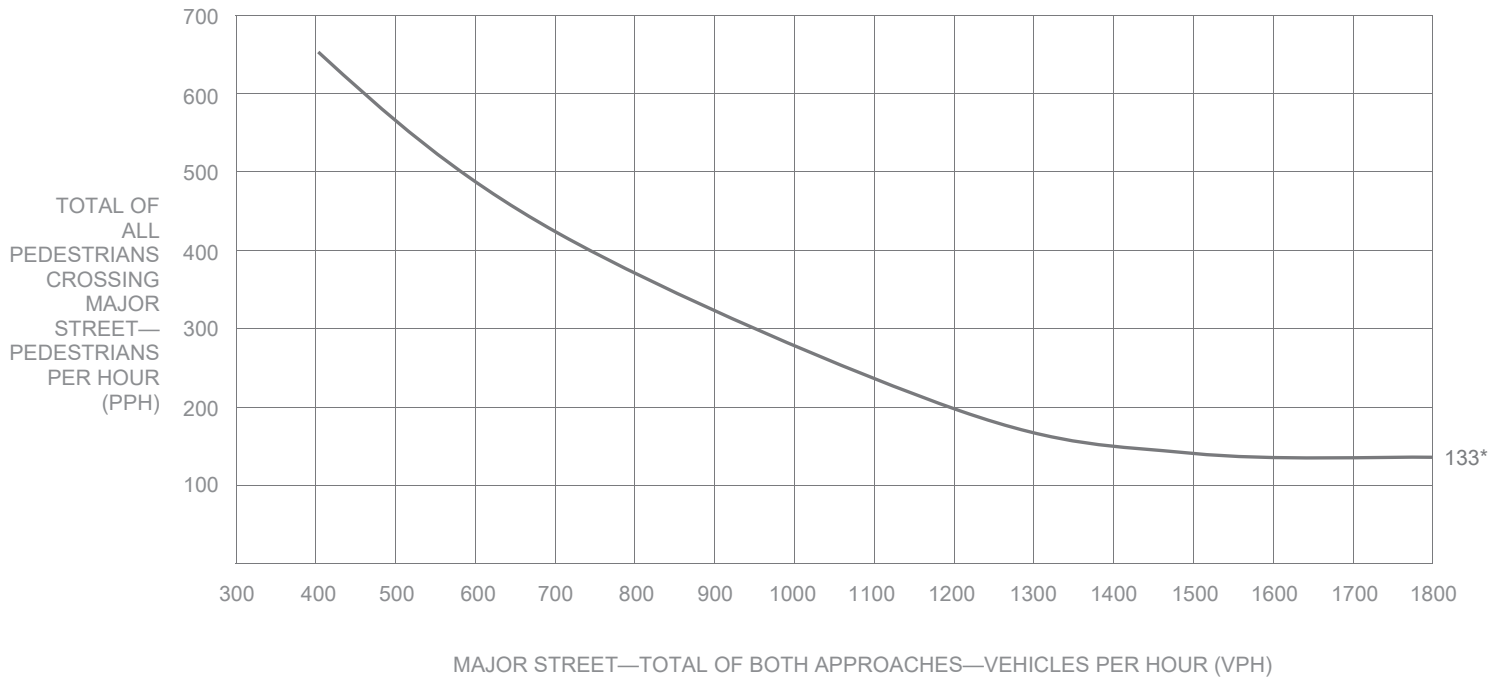


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

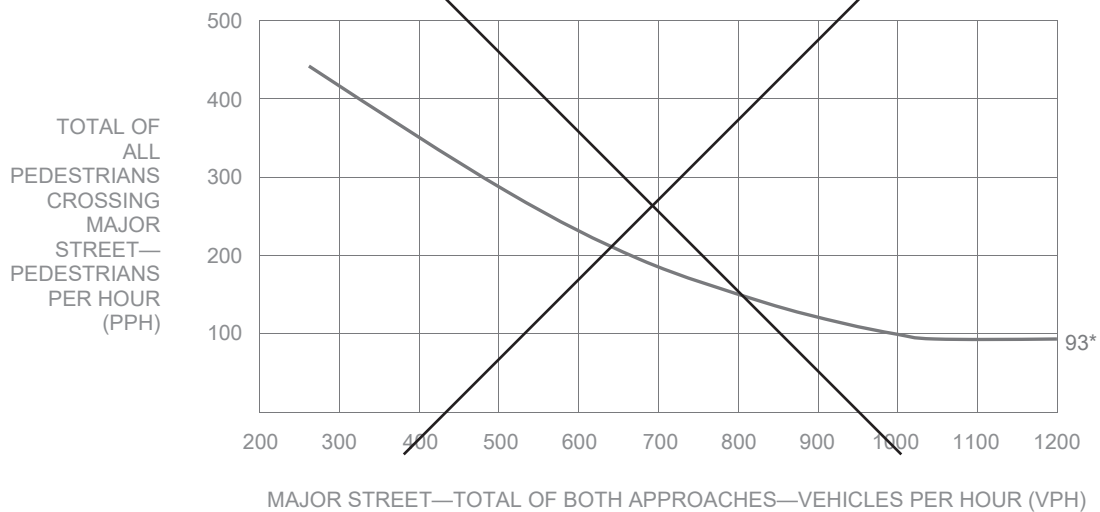
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED		YES	NO									
						<input type="checkbox"/>	<input type="checkbox"/>									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">Gaps vs Minutes</td> <td style="width: 40%;">Minutes Children Using Crossing</td> <td style="width: 10%; text-align: center;">Hour</td> </tr> <tr> <td></td> <td>Number of Adequate Gaps</td> <td></td> </tr> <tr> <td colspan="3" style="text-align: center;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="width: 45%;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Gaps < Minutes</div> <div style="border: 1px solid black; padding: 5px;">AND Children ≥ 20/hr</div> </div> </div>				Gaps vs Minutes	Minutes Children Using Crossing	Hour		Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO		
Gaps vs Minutes	Minutes Children Using Crossing	Hour														
	Number of Adequate Gaps															
School Age Pedestrians Crossing Street / hr																
				<input type="checkbox"/>	<input type="checkbox"/>											
				<input type="checkbox"/>	<input type="checkbox"/>											
AND, Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>											

PART B		SATISFIED		YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR, The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordinated Signal System

WARRANT
6

N/A

☒

SATISFIED

YES

☐

NO

☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>
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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant

N/A ☒SATISFIED YES ☐NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

			YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency			<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:		<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):			
REQUIREMENTS	CONDITIONS	✓		
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume			
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8			

Roadway Network

N/A ☒SATISFIED YES ☐NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULLFILLED	
				YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.			<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr				
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B		
Highway 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				YES	NO
Any Major Route Characteristics Met, Both Streets				<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

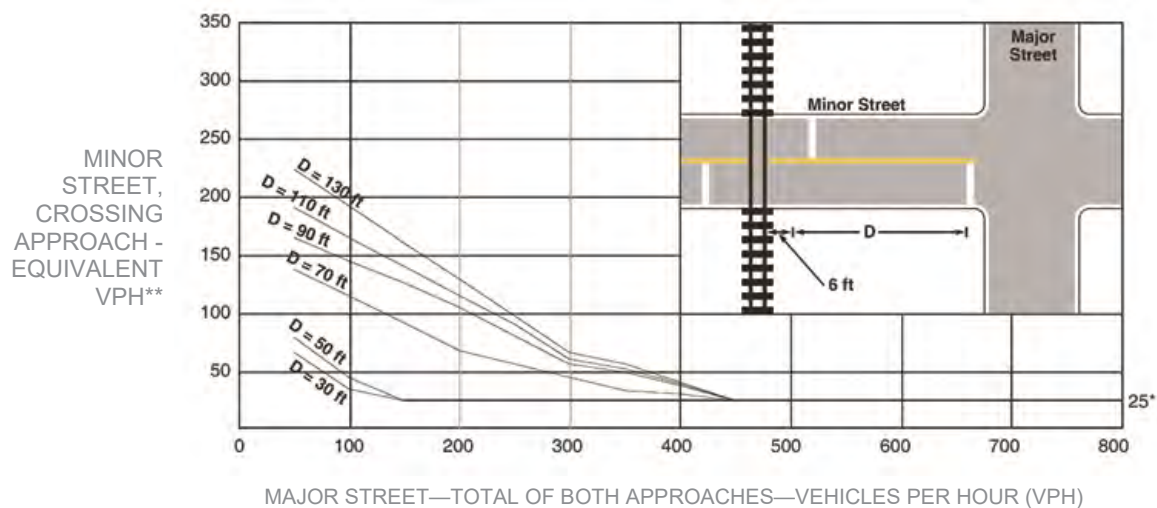
Intersection Near a Grade Crossing *(continued)*

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

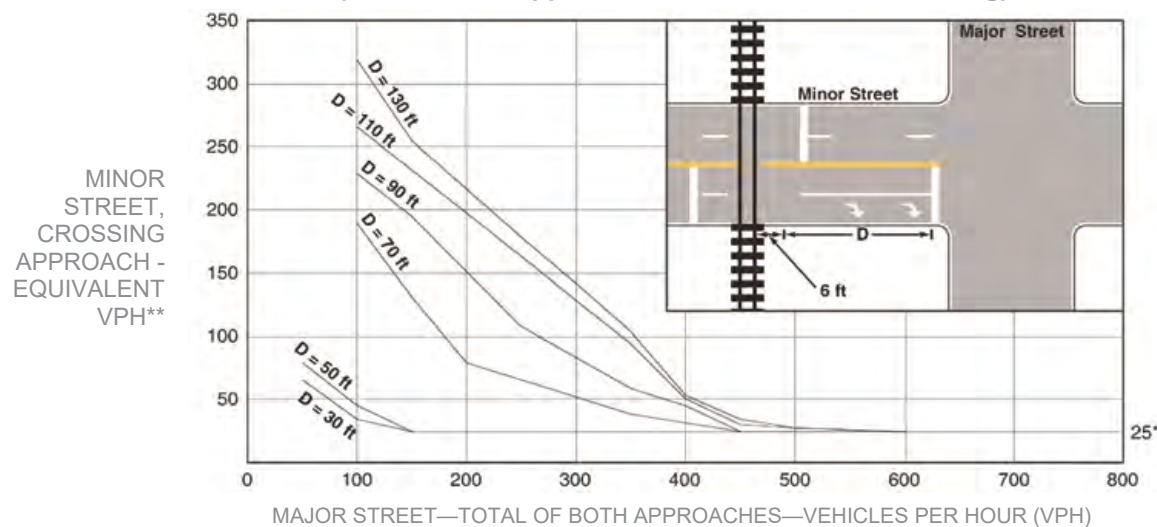
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.


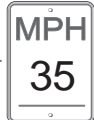
PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Sunset Boulevard

MINOR ST: US 101 SB On-Ramp

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> (If Yes, fill in percentage)		
	U	R	U	R			
APPROACH LANES	1		2 or More				
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	3534		
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	40		

Hours							
05:00							

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO
					100%	<input type="checkbox"/>	<input type="checkbox"/>
					80%	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)					RIGHT TURN REDUCTION APPLICATION <i>MINOR STREET</i> (If Yes, fill in percentage)		
	U	R	U	R			
APPROACH LANES	1		2 or More				
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	3534		
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	40		

Hours							
05:00							

COMBINATION OF A & B

			SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	

REQUIREMENT	CONDITION	✓	FULFILLED	
			YES	NO
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME			
	AND B. INTERRUPTION OF CONTINUOUS TRAFFIC		<input type="checkbox"/>	<input type="checkbox"/>
AND AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Minor Street	Major Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	1.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	2 or More.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	1.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	2 or More.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

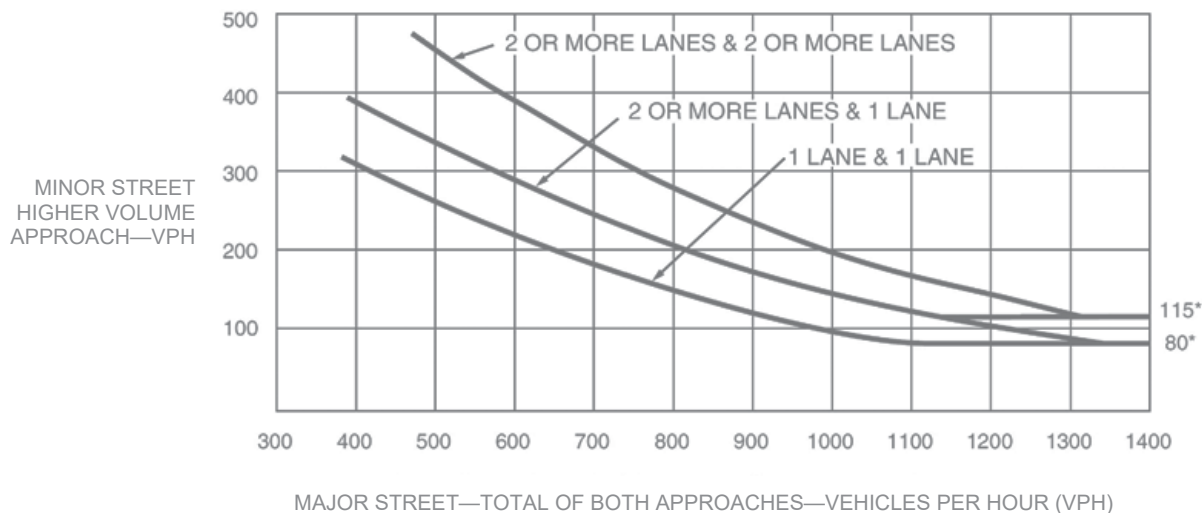
APPROACH LANES	Hours						YES	NO
	One	2 or More	05:00					
Both Approaches - Major Street		✓	3534				<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		40				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage) _____%	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)							<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)							<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

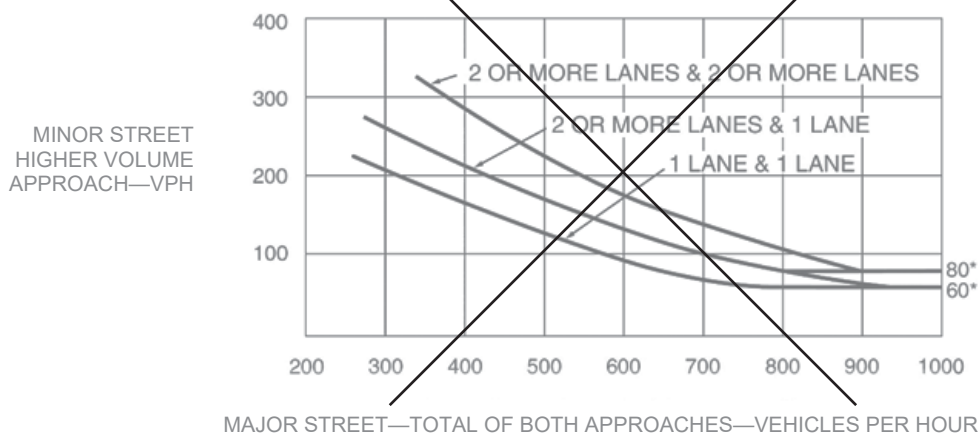
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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

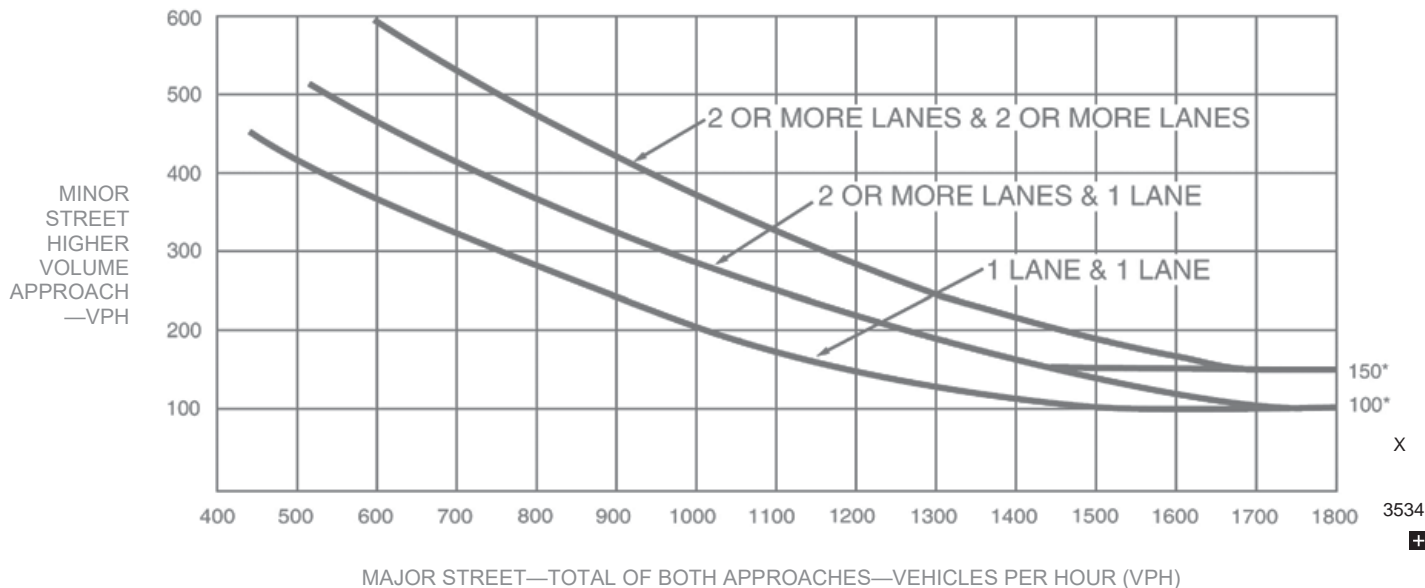


*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Peak Hour (continued)

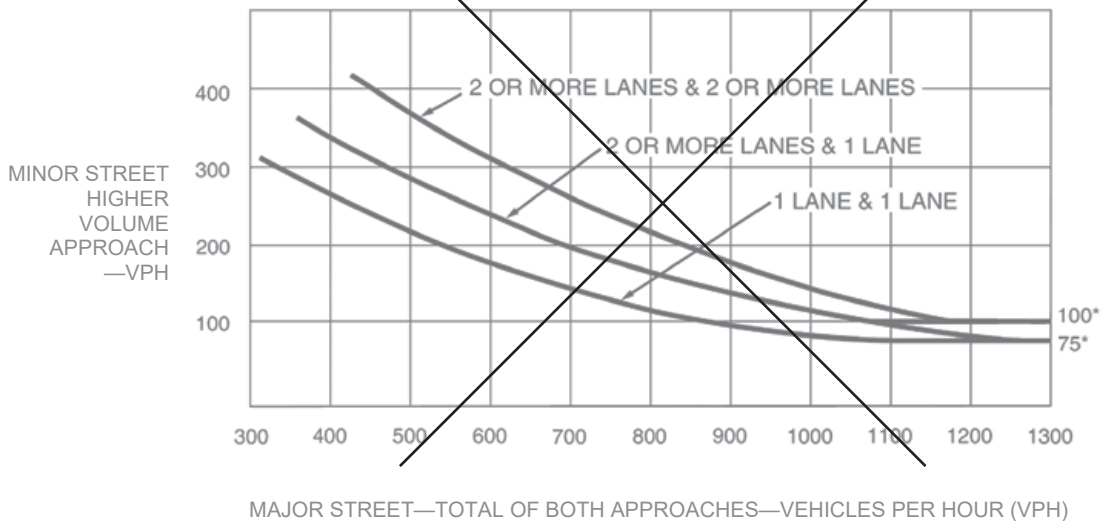
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>

15% WALKING RATE _____ fps

PART 2

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

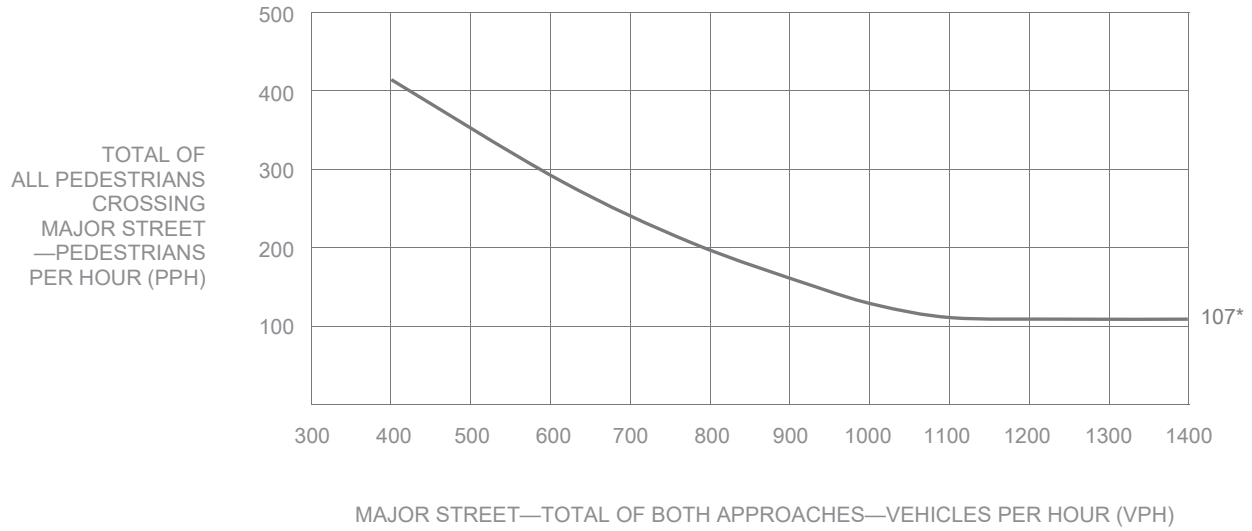
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Pedestrian Volume *(continued)*

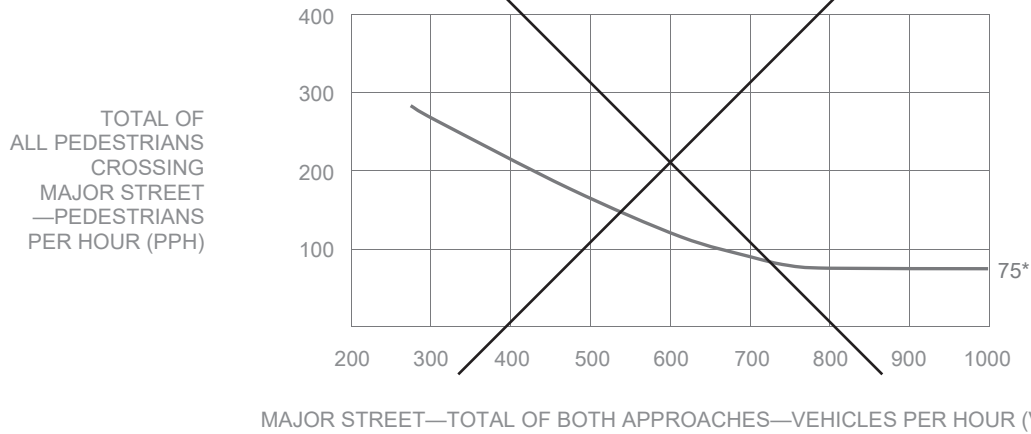
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

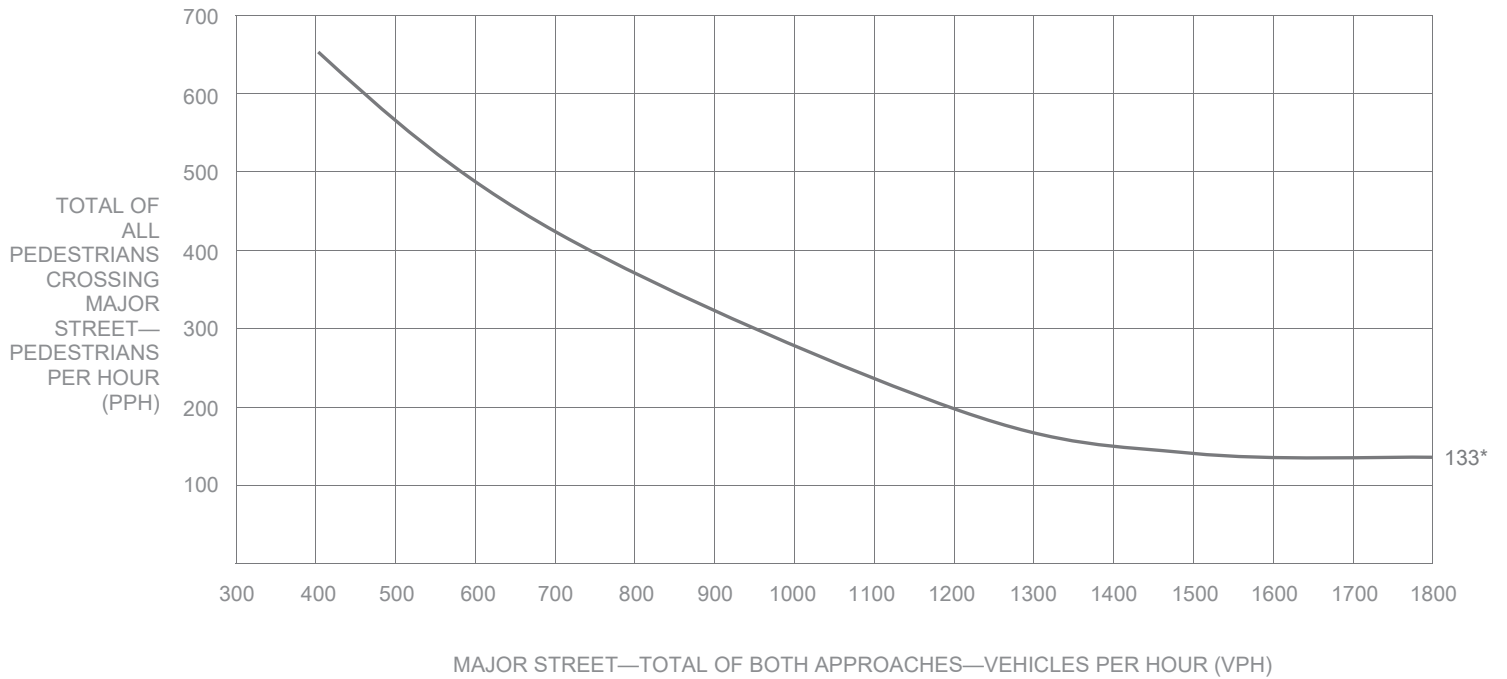


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

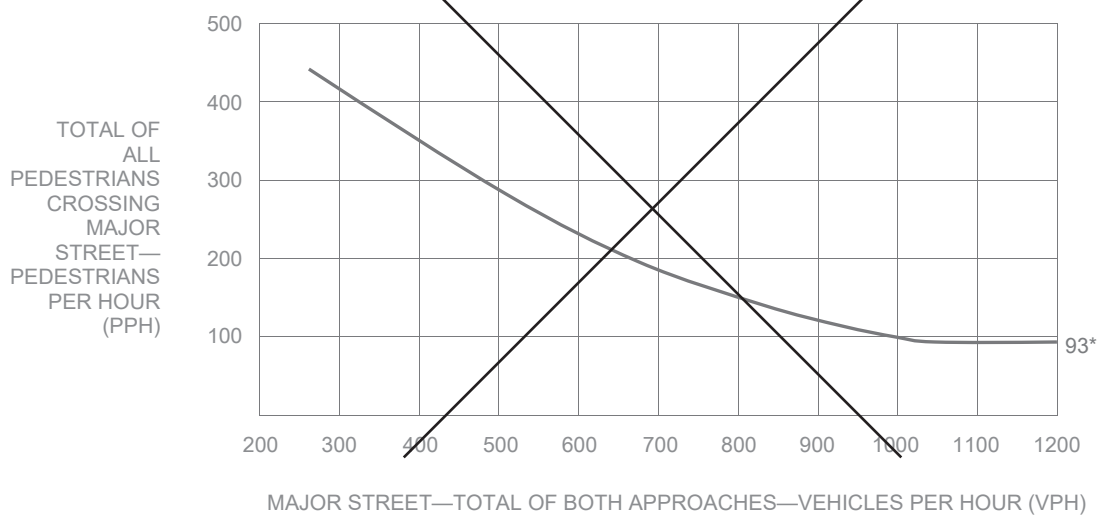
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED		YES	NO									
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div> </td> <td style="width: 20%; padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">Number of Adequate Gaps</td> <td style="padding: 5px;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; width: 40%;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>			Number of Adequate Gaps		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; height: 20px; width: 100%;"></div>															
	Number of Adequate Gaps															
School Age Pedestrians Crossing Street / hr																
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>											

PART B		SATISFIED		YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>		

Coordinated Signal System

WARRANT
6

N/A
☒

SATISFIED
YES
☐

NO
☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	<input checked="" type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A	<input checked="" type="checkbox"/>
SATISFIED YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	YES NO	
Highway 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				
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

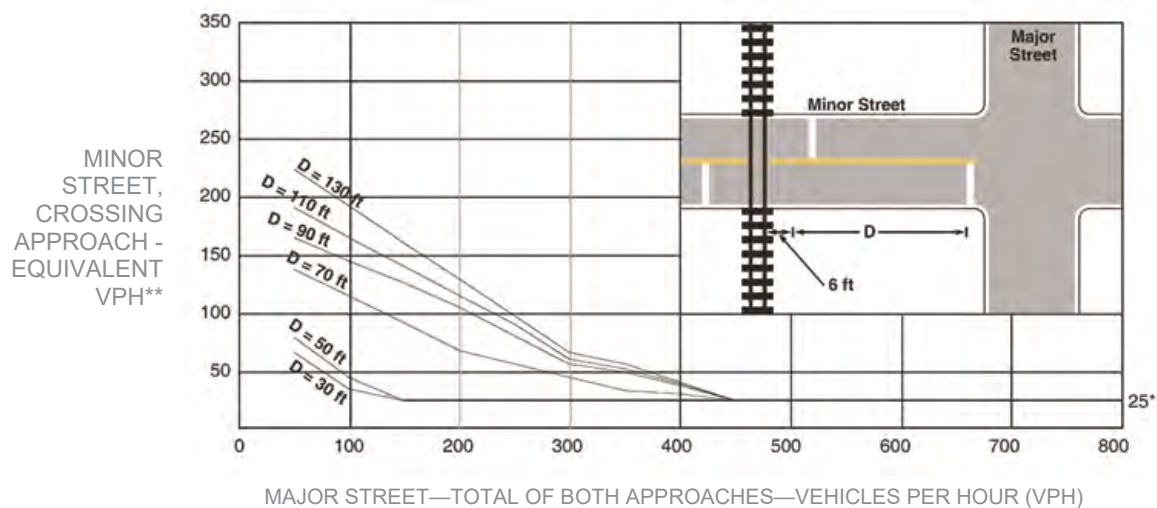
Intersection Near a Grade Crossing *(continued)*

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

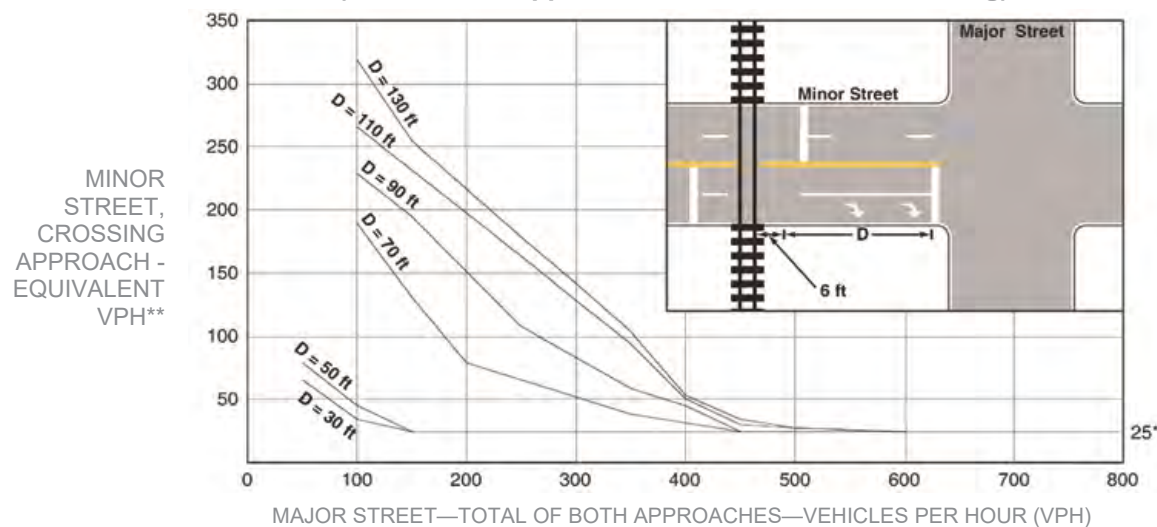
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
AND				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
OR GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.


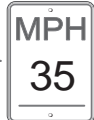
PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

DATE 11/30/17 PREPARER GTC REVIEWER _____

MAJOR ST: Sunset Boulevard

MINOR ST: US 101 SB On-Ramp

Critical Approach Speed }  or Speed Limit } 

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

Eight-Hour Vehicular Volume



N/A ☒
SATISFIED YES ☐
NO ☐

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

- Condition A or Condition B or combination of 80% of both parts A and B must be satisfied.
- A 6-hour Manual Count may be used in a determination that this warrant is not met. However, supplement manual counts should be taken during separate hours for a determination that this warrant is met.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- Figure 4C-103(CA) should be used for new intersections, significantly reconstructed intersections, where near-term land development will result in increased volumes, or where it is not reasonable to use current traffic volumes.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

Eight-Hour Vehicular Volume *(continued)*

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

Condition A

Minimum Vehicle Volume

					SATISFIED	YES	NO	
					100%	<input type="checkbox"/>	<input type="checkbox"/>	
					80%	<input type="checkbox"/>	<input type="checkbox"/>	
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input type="checkbox"/> _____ %			
					<input checked="" type="checkbox"/>			
					MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)			
					U	R	U	R
APPROACH LANES	1		2 or More		Hours			
Both Approach Major Street	500 (400)	350 (280)	600 (480)	420 (336)	05:00			
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	62			

Condition B

Interruption of Continuous Traffic

					SATISFIED	YES	NO	
					100%	<input type="checkbox"/>	<input type="checkbox"/>	
					80%	<input type="checkbox"/>	<input type="checkbox"/>	
					RIGHT TURN REDUCTION APPLICATION MINOR STREET <i>(If Yes, fill in percentage)</i> <input type="checkbox"/> _____ %			
					<input type="checkbox"/>			
					MINIMUM REQUIREMENTS (80% SHOW IN BRACKETS)			
					U	R	U	R
APPROACH LANES	1		2 or More		Hours			
Both Approach Major Street	750 (600)	525 (420)	900 (720)	630 (504)	05:00			
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	62			

COMBINATION OF A & B

			SATISFIED	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	
REQUIREMENT	CONDITION	✓	FULFILLED		
			YES	NO	
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME				
	AND		<input type="checkbox"/>	<input type="checkbox"/>	
	B. INTERRUPTION OF CONTINUOUS TRAFFIC				
	AND				
AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCOVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			<input type="checkbox"/>	<input type="checkbox"/>	

Eight-Hour Vehicular Volume (continued)

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

Projected Volumes	SATISFIED	YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)
Based on Estimated Average Daily Traffic - see Note*

URBAN <input type="checkbox"/>		RURAL <input type="checkbox"/>		Minimum Requirements Estimated Average Daily Traffic			
CONDITION A - Minimum Vehicular Volume Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Major Street	Minor Street	Major Street	Minor Street				
1.....	1.....	1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	1.....	1.....	1.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				Vehicles Per Day On Major Street (Total of Both Approaches)		Vehicles Per Day On Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach				Urban	Rural	Urban	Rural
Minor Street	Minor Street	Minor Street	Minor Street				
1.....	1.....	1.....	1.....	12,000	8,400	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	1.....	1.....	1.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied <input type="checkbox"/> Not Satisfied <input type="checkbox"/>				2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... A B							

* **Note:** To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes

Four-Hour Vehicular Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Record hourly vehicle volumes for the highest four hours of an average day.
- In applying each condition, the major street and minor street volumes shall be for the same hours. On the minor street, the higher volume does not need to be the same approach during each of the hours.
- 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.
- 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. This 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. 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.
- 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 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. In these cases, engineering judgment should be used to determine if left-turn phasing is necessary to accommodate the high volume of left-turn traffic.

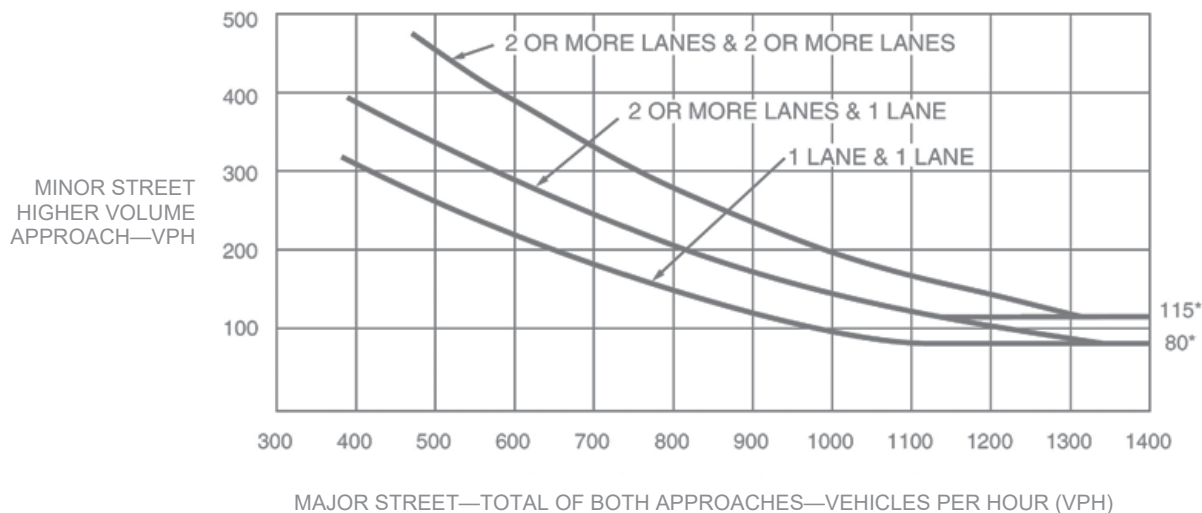
APPROACH LANES			Hours					YES	NO
	One	2 or More	05:00						
Both Approaches - Major Street		✓	4432				RIGHT TURN REDUCTION APPLICATION MINOR STREET (If Yes, fill in percentage)	<input type="checkbox"/>	<input type="checkbox"/>
Higher Approach - Minor Street	✓		62					_____ %	
* All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)								<input type="checkbox"/>	<input type="checkbox"/>
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)								<input type="checkbox"/>	<input type="checkbox"/>

Four-Hour Vehicular Volume (continued)

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

URBAN

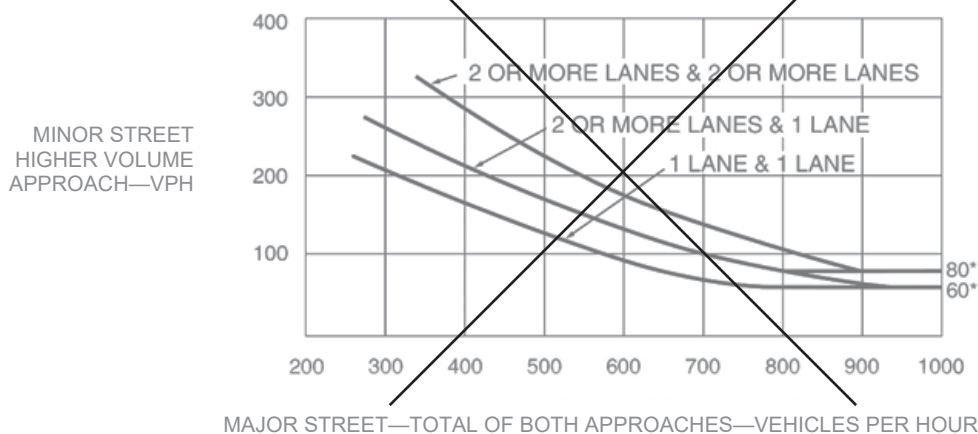
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*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.

RURAL

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

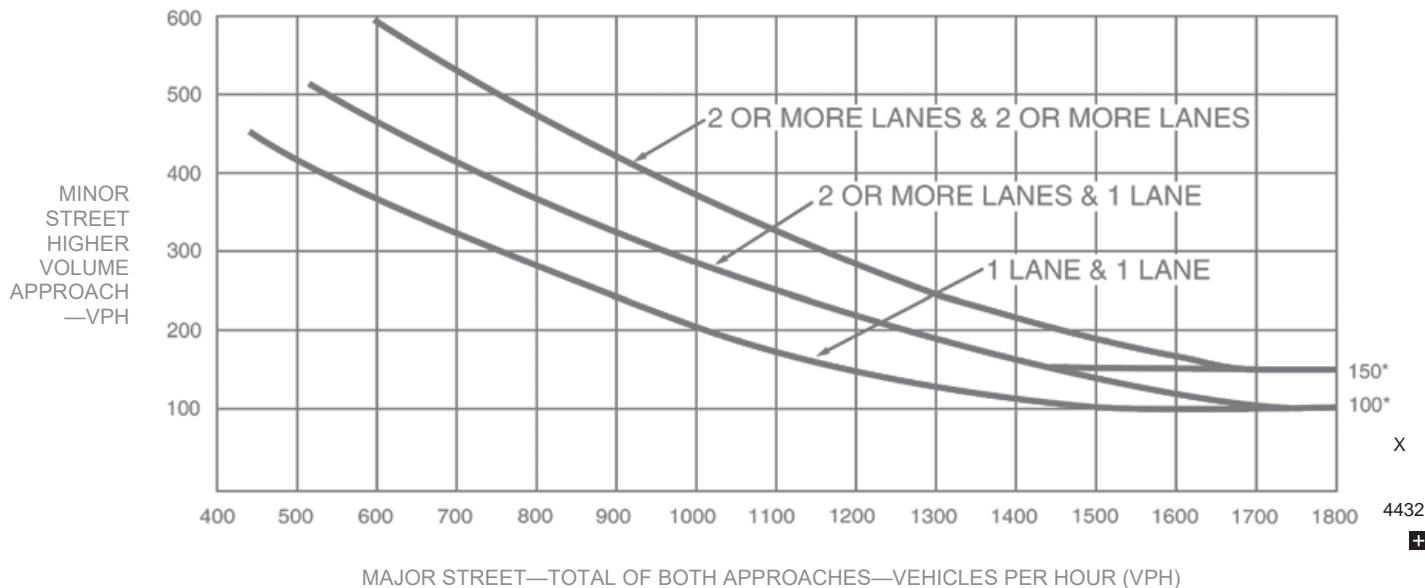


*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Peak Hour (continued)

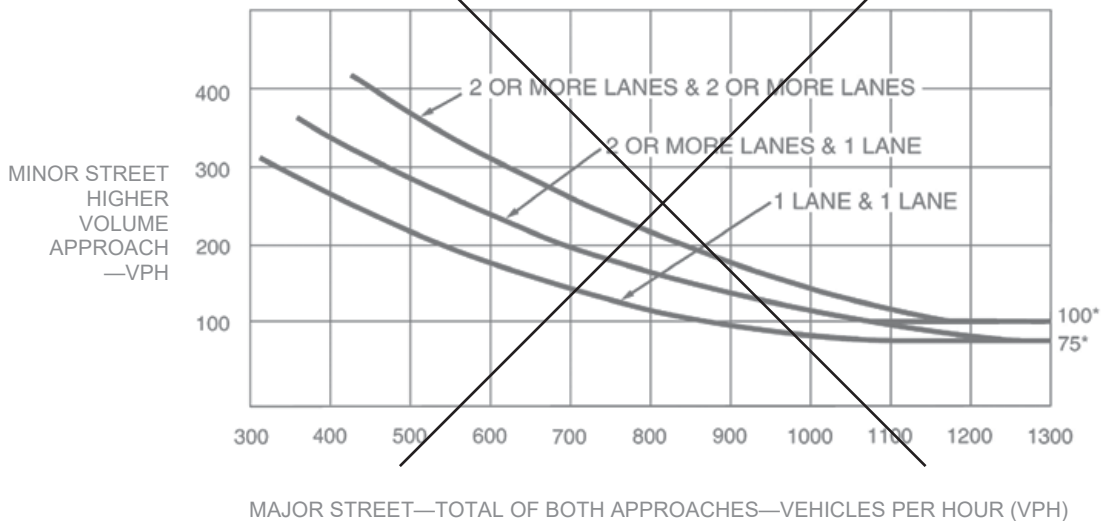
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

URBAN
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.

RURAL
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



* 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.

Pedestrian Volume



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Parts 1 and 2 shall be satisfied.
- The pedestrian volume criterion may be reduced by as much as 50% if the 15th percentile speed of the pedestrians is less than 3.5 feet/second.
- Estimated pedestrian volumes may be used where nearby, near-term land use development has been approved for construction.
- In applying each condition, the total vehicles per hour on the major street (on both approaches) and the total pedestrians per hour crossing the major street shall be for the same hours.
- The Pedestrian Volume signal warrants 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.
- 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.
- If it is considered 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. 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.
- Bicycles may be counted as pedestrians.

PART 1 (A or B must be satisfied)

SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. FOUR-HOUR PEDESTRIAN VOLUMES

	Hours			
Vehicles per hour on major street for 4 hours				
Pedestrians crossing major street per hour for highest 4 hours				

(FIGURE 4C-5 OR 4C-6 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

B. ONE HOUR PEDESTRIAN VOLUMES

	Hour
Vehicles per hour on major street for 1 hour	
Pedestrians crossing major street per hour for highest 1 hour	0

(FIGURE 4C-7 or 4C-8 SATISFIED)

SATISFIED	YES	NO
100%	<input type="checkbox"/>	<input type="checkbox"/>
50%	<input type="checkbox"/>	<input type="checkbox"/>
15% WALKING RATE	_____ fps	

PART 2

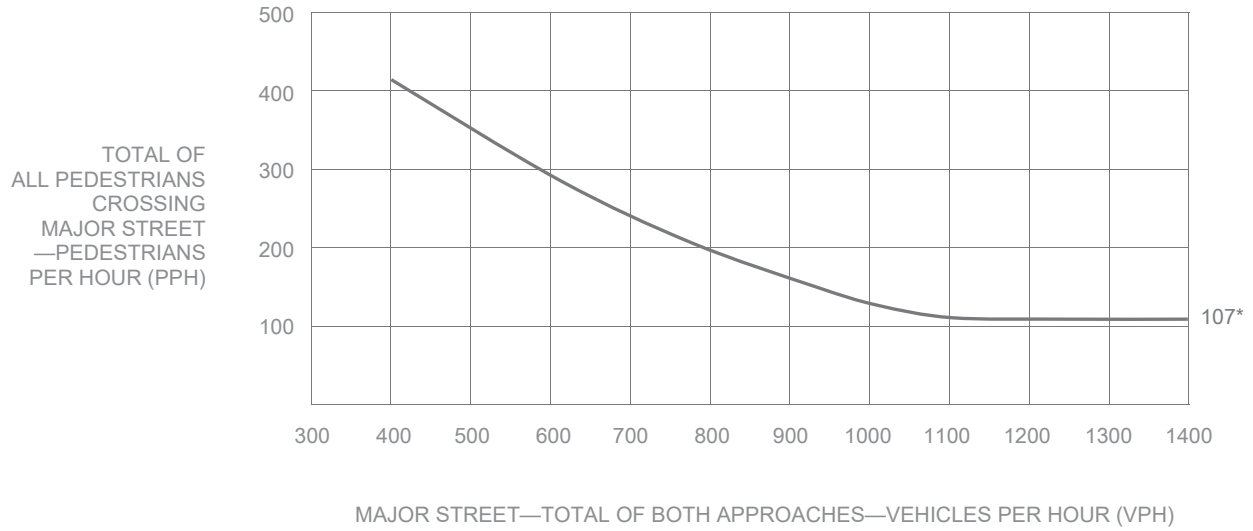
SATISFIED	YES	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street	<input type="checkbox"/>	<input type="checkbox"/>

Pedestrian Volume *(continued)*

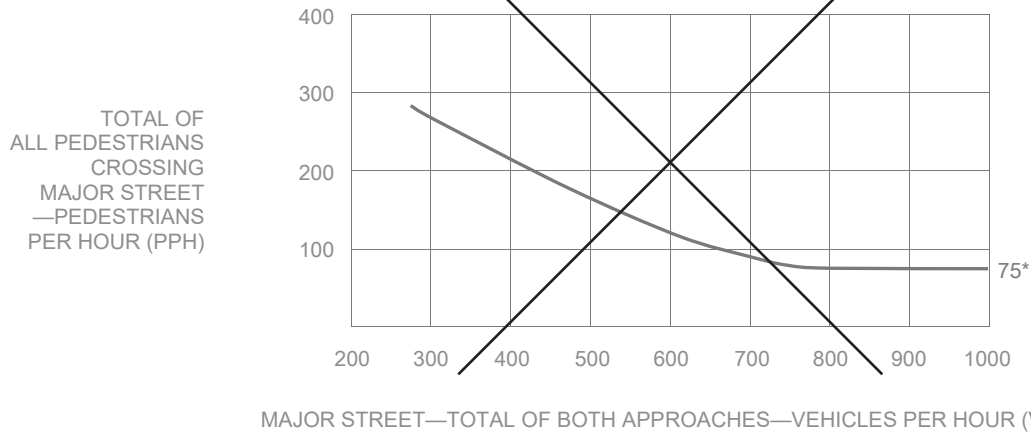
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* Note: 107 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

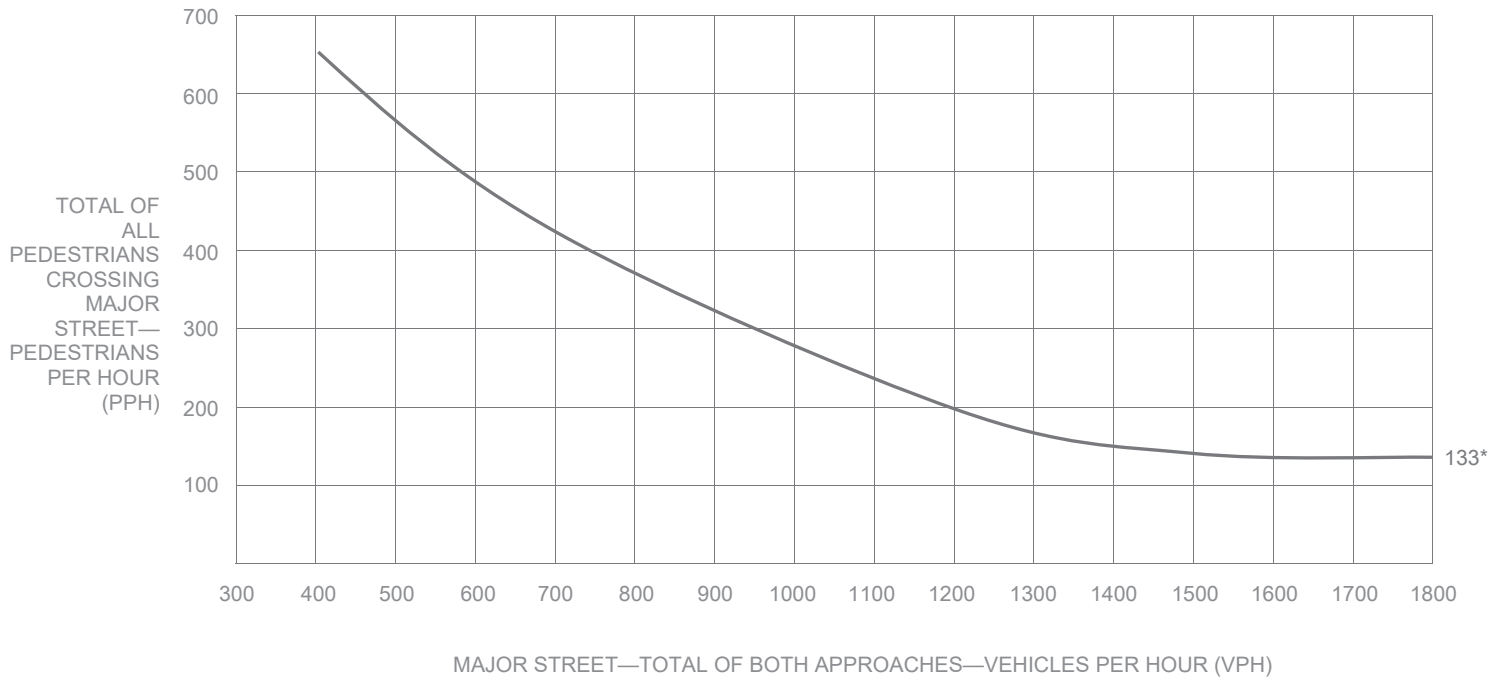


* Note: 75 pph applies as the lower threshold volume

Pedestrian Volume *(continued)*

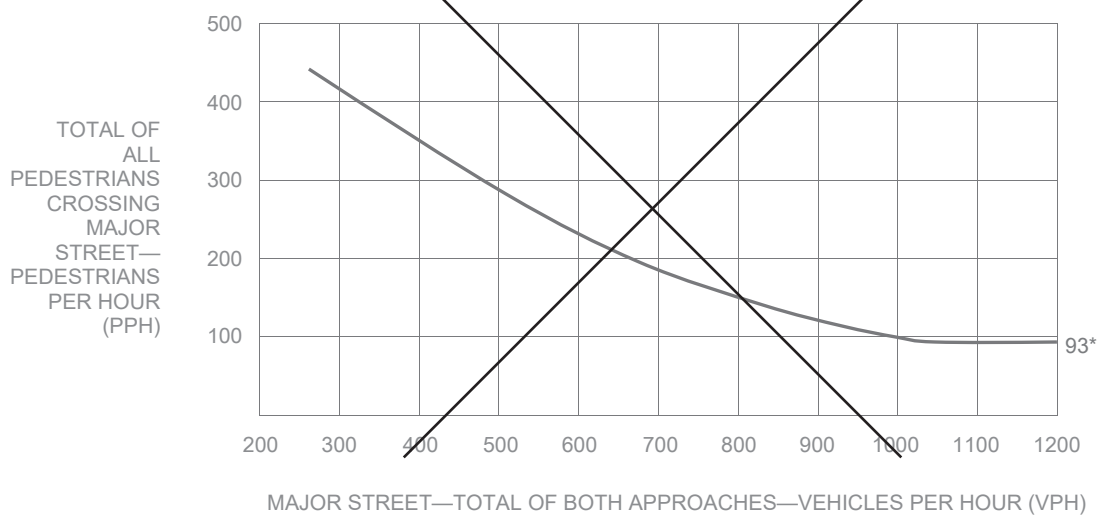
★ The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal ★

SPEED ≤ 35 MPH
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume

SPEED > 35 MPH
Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



* Note: 93 pph applies as the lower threshold volume

School Crossing

WARRANT
5

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Part A and Part B shall be satisfied.
- b. For purposes of this warrant, schoolchildren include elementary through high school students.
- c. Estimated schoolchildren volumes may be used where a new school or expanded school has been approved for construction.
- d. 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 and there are a minimum of 20 schoolchildren during the highest crossing hour.
- e. 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.
- f. Non-intersectional schoolchildren crosswalk locations may be signalized when justified.

PART A				SATISFIED	YES	NO							
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px;"> Gap / Minutes and # of Children <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Gaps vs Minutes</td> <td style="width: 65%; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div> </td> <td style="width: 20%; padding: 5px;"></td> </tr> <tr> <td colspan="3" style="padding: 5px;">School Age Pedestrians Crossing Street / hr</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> Gaps < Minutes AND Children ≥ 20/hr </div> </div>				Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>		School Age Pedestrians Crossing Street / hr			YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
Gaps vs Minutes	<div style="display: flex; justify-content: space-between;"> <div>Minutes Children Using Crossing</div> <div>Hour</div> </div> <div style="border-top: 1px solid black; padding-top: 5px;">Number of Adequate Gaps</div>												
School Age Pedestrians Crossing Street / hr													
AND , Consideration has been given to less restrictive remedial measures				<input type="checkbox"/>	<input type="checkbox"/>								

PART B		SATISFIED	YES	NO
The distance to the nearest traffic signal along the major street is greater than 300 ft		YES	NO	<input type="checkbox"/>
OR , The proposed traffic signal will not restrict progressive movement of traffic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordinated Signal System

WARRANT
6

N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. 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.
- b. All Parts must be satisfied.

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	YES	NO
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>
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. 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.		<input type="checkbox"/>	<input type="checkbox"/>

Crash Experience Warrant



N/A ☒

SATISFIED YES ☐

NO ☐

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

- All Parts must be satisfied.
- For locations that involve other agencies, crash data from other involved jurisdictions should be obtained.

		YES	NO
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency		<input type="checkbox"/>	<input type="checkbox"/>
REQUIREMENTS	Number of crashes reported within a 12-month period susceptible to correction by a traffic signal:	<input type="checkbox"/>	<input type="checkbox"/>
5 OR MORE	Indicate Date(s):		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	<input type="checkbox"/>	<input type="checkbox"/>
	OR, Warrant 4, Pedestrian Volume Condition - Ped Vol ≥ 80% for ped volumes per Figures 4C-5 to 4C-8		

Roadway Network



N/A ☒

SATISFIED YES ☐

NO ☐

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

- Existing traffic volumes with an ambient growth rate of 1% (or other LADOT approved ambient growth rate) may be used if projected volumes are not available.
- All Parts must be satisfied.

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULLFILLED	
			YES	NO
1000 Veh / Hr	During Typical Weekday Peak Hour _____ Veh/Hr AND has 5-year projected traffic volumes that meet one or more of Warrants 1,2, and 3 during an average weekday.		<input type="checkbox"/>	<input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Saturday or Sunday _____ Veh / Hr			
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B	
Highway 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				YES NO
Any Major Route Characteristics Met, Both Streets			<input type="checkbox"/>	<input type="checkbox"/>

Intersection Near a Grade Crossing



N/A ☒

SATISFIED YES ☐

NO ☐

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

- a. Both Parts A and B shall be satisfied.
- b. This Warrant shall only be applied after review and approval by the LADOT Railroad Crossing and Safety Section (RCOSS), subject to CPUC General Order approval.
- c. This Warrant does not apply for Pre-Signals and/or Queue-Cutter signals, as an alternative application of Pre-Signals (See 2012 CA MUTCD, Sec 8C.09). Pre-Signals shall only be applied after review and approval by RCOSS, subject to CPUC General Order approval.

	FULFILLED	
	YES	NO
PART 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	<input type="checkbox"/>	<input type="checkbox"/>
PART B 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	<input type="checkbox"/>	<input type="checkbox"/>
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 calculate 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 available or known, then use AF = 1 (no adjustment)

**Table 4C-2. Warrant 9,
Adjustment Factor for
Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9,
Adjustment Factor for
Percentage of High-Occupancy Buses**

% of High-Occupancy Buses * on Minor-Street Approach	Adjustment Factor
0 %	1.00
2 %	1.09
4 %	1.19
6 % or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

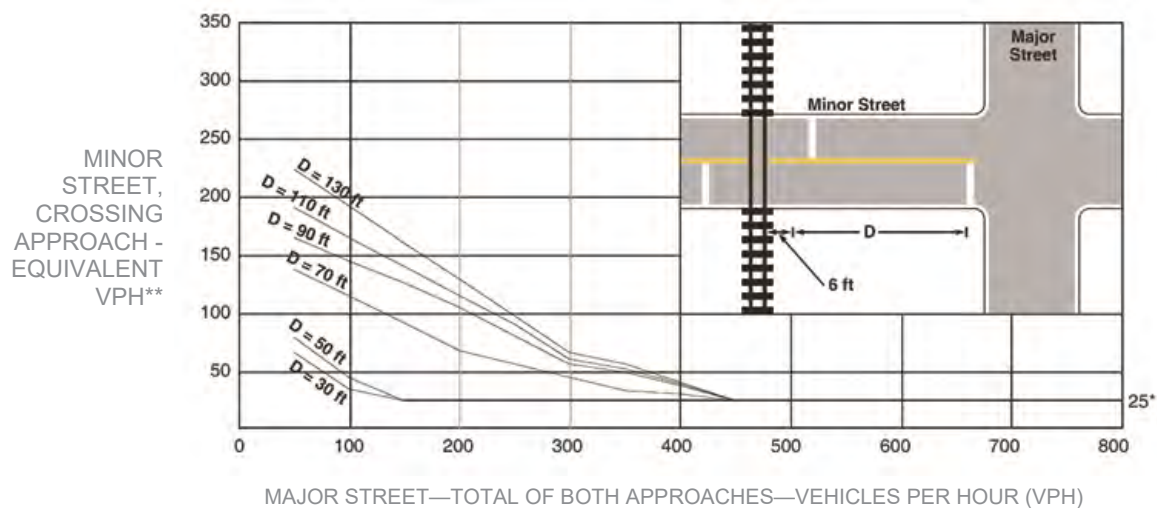
Intersection Near a Grade Crossing *(continued)*

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

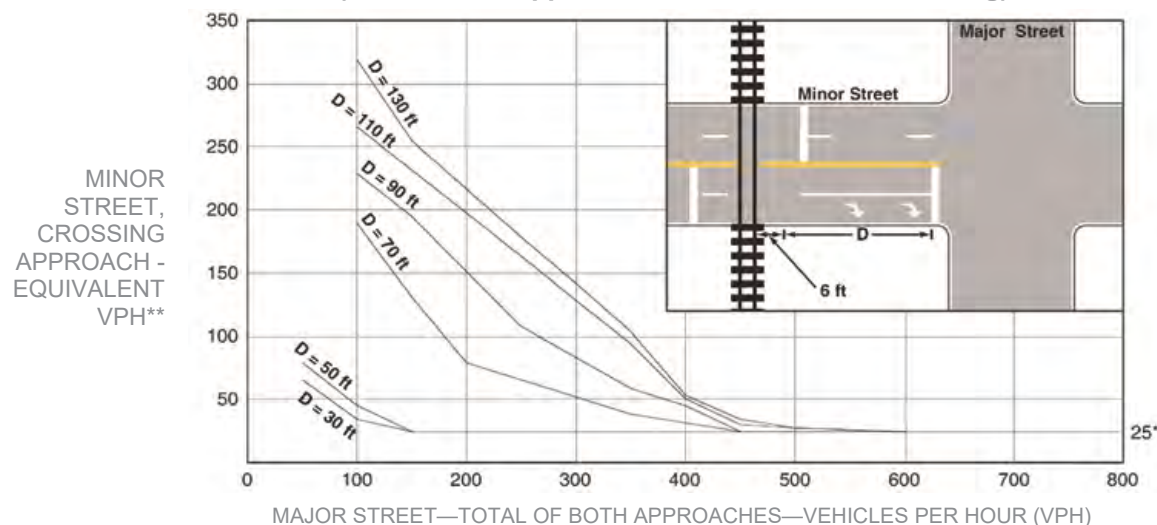
**Table 4C-4. Warrant 9,
Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

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



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



* 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

Bicycles

WARRANT
10

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. A bicycle signal should be considered for use only when the Volume requirement and Collision requirement have been met, or the Volume requirement and Geometry requirement have been met.
- b. Bicycle and vehicle volumes shall use the same peak hour.

		Hour	FULFILLED	
			YES	NO
VOLUME REQUIREMENT	One-Hour bicycle volume entering intersection B= _____			
	One-Hour vehicle volume entering intersection V= _____		<input type="checkbox"/>	<input type="checkbox"/>
	$B \times V = W$ W= <u>0</u>			
	$B \geq 50$ AND $W \geq 50,000$			
<u>AND</u>				
COLLISION REQUIREMENT	Two or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal over a 12-month period. DATES: _____		YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>
<u>OR</u> GEOMETRY REQUIREMENT	A separate bicycle or multi-use path intersects roadway			
	OR, is necessary to facilitate a bicycle movement that is not permitted by motor vehicles			

Activated Pedestrian Warning Device

WARRANT
11

N/A ☒
SATISFIED YES ☐
NO ☐

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

- a. All Parts shall be satisfied.
- b. This warrant should be applied when an Activated Pedestrian Warning Device is recommended within 600 feet both upstream and downstream of existing traffic signals.

PART A	YES	NO
Location meets the guidelines for the installation of an Activated Pedestrian Warning Device as described in MPP section 354.	<input type="checkbox"/>	<input type="checkbox"/>

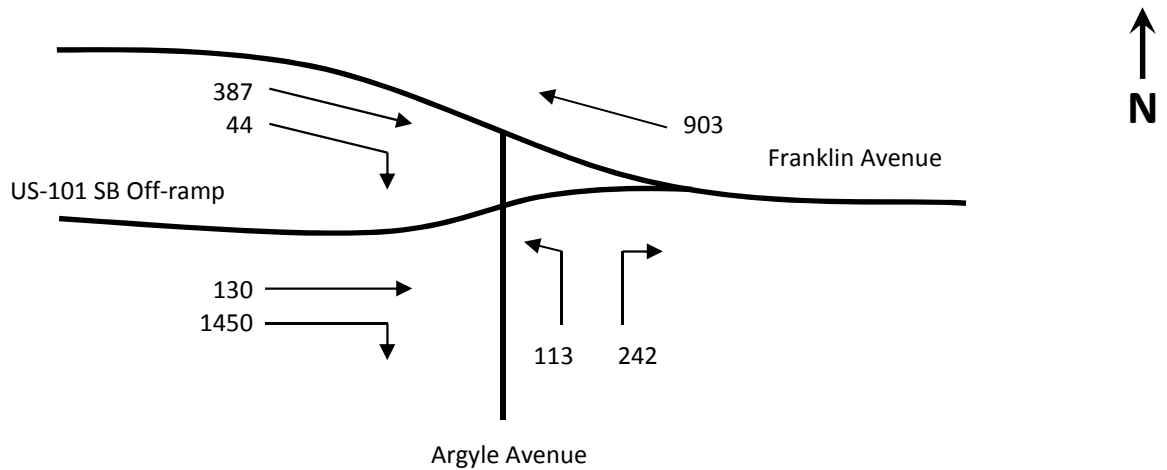
MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNALS	YES	NO
≤ 600 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	<input type="checkbox"/>	<input type="checkbox"/>

Appendix F

Supermarket Option Level of Service Worksheets

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Existing with Project Conditions - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{903}{2} = 452 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{387}{2} = 194 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 130$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{452}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{113 + 242}{2} = \frac{355}{2} = 178 \quad \text{or}$$

$$\text{Northbound Right: } 242 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 44$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{178}$$

$$\text{Critical Volume: } 452 + 178 = \mathbf{630}$$

$$\text{Intersection V/C: } \frac{630}{1500} = \mathbf{0.42}$$

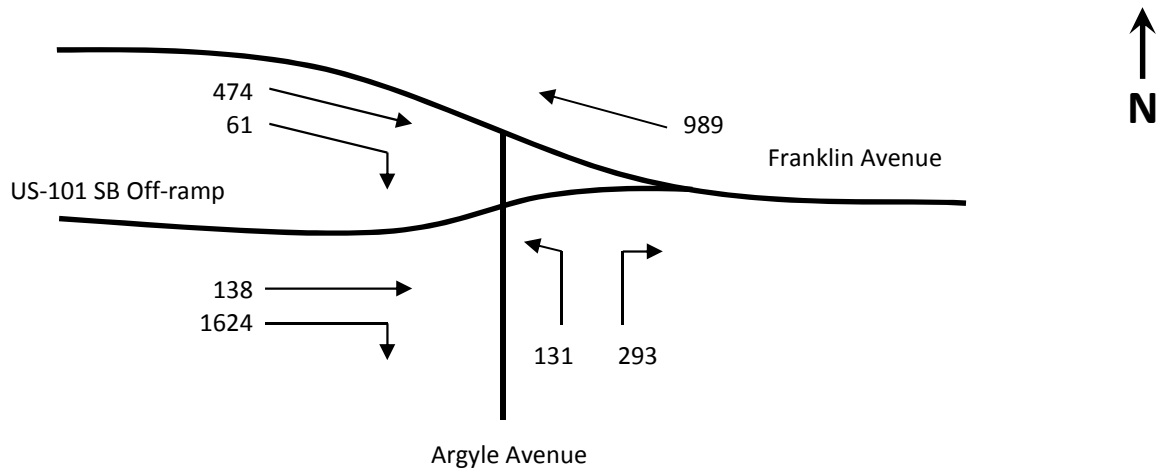
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.320}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Future with Project Conditions (Year 2023) - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{989}{2} = 495 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{474}{2} = 237 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 138$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{495}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{131 + 293}{2} = \frac{424}{2} = 212 \quad \text{or}$$

$$\text{Northbound Right: } 293 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 61$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{212}$$

$$\text{Critical Volume: } 495 + 212 = \mathbf{707}$$

$$\text{Intersection V/C: } \frac{707}{1500} = \mathbf{0.471}$$

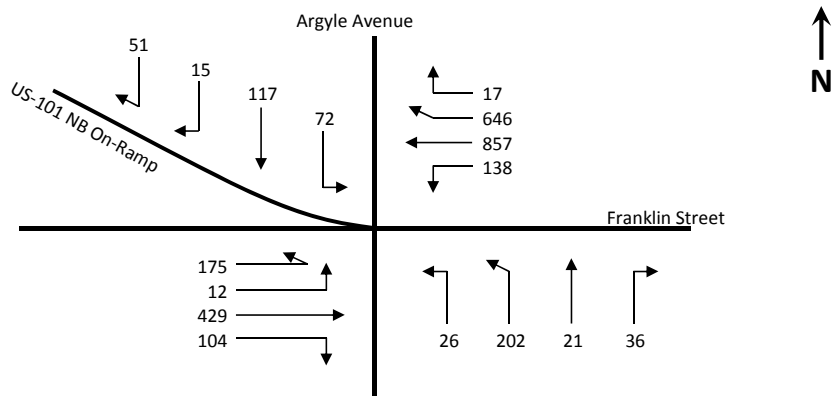
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.371}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Existing with Project Conditions - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $175 + 12 = 187$ and

Westbound Throughs + Rights:

$$\frac{857 + 646 + 17}{2} = \frac{1520}{2} = 760 \quad \text{or}$$

Westbound Rights: $646 + 17 = 663$ or

Westbound Lefts: 138 and

Eastbound Throughs: $\frac{429}{2} = 215$ or

Eastbound Rights: 104

Critical Volume #1 (CV1): **947**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{26 + 202 + 21}{2} = \frac{249}{2} = 125 \quad \text{or}$$

Northbound Rights: $36 - 0.5 \times \text{WBL} = 0$

Critical Volume #2 (CV2): **125**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 72 or

Southbound Throughs + Rights:

$$\frac{117 + 15 + 51}{2} = \frac{183}{2} = 92 \quad \text{or}$$

Southbound Rights: $15 + 51 = 66$

Critical Volume #3 (CV3): **92**

Critical Volume: $947 + 125 + 92 = 1164$

Intersection V/C: $\frac{1164}{1375} = 0.847$

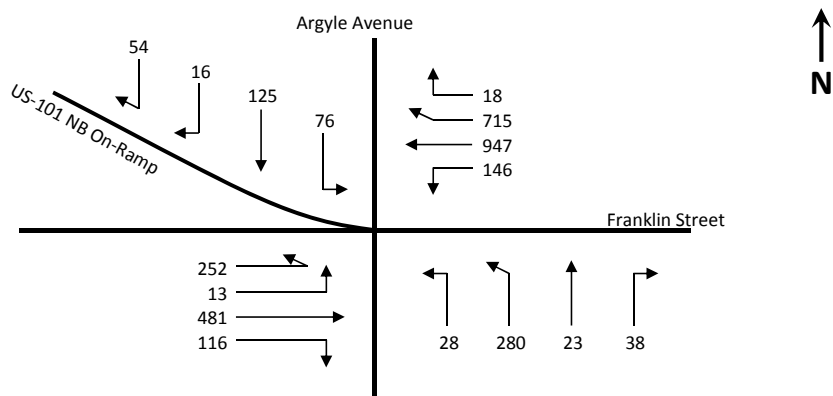
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.747**

Intersection LOS: **C**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Future with Project Conditions (Year 2023) - AM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $252 + 13 = 265$ and

Westbound Throughs + Rights:

$$\frac{947 + 715 + 18}{2} = \frac{1680}{2} = 840 \quad \text{or}$$

Westbound Rights: $715 + 18 = 733$ or

Westbound Lefts: 146 and

Eastbound Throughs: $\frac{481}{2} = 241$ or

Eastbound Rights: 116

Critical Volume #1 (CV1): **1105**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{28 + 280 + 23}{2} = \frac{331}{2} = 166 \quad \text{or}$$

Northbound Rights: $38 - 0.5 \times \text{WBL} = 0$

Critical Volume #2 (CV2): **166**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 76 or

Southbound Throughs + Rights:

$$\frac{125 + 16 + 54}{2} = \frac{195}{2} = 98 \quad \text{or}$$

Southbound Rights: $16 + 54 = 70$

Critical Volume #3 (CV3): **98**

Critical Volume: $1105 + 166 + 98 = 1369$

Intersection V/C: $\frac{1369}{1375} = 0.996$

ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.896**

Intersection LOS: **D**

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:		Gower St		Year of Count:		2017		Ambient Growth: (%)		1		Conducted by:		GTC		Date:		12/1/2016	
		East-West Street:		Franklin Ave		Projection Year:		2023		Peak Hour:		AM		Reviewed by:				Project:		J1522	
		No. of Phases				4				4				4				4			
		Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1				1				1				1			
		Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0		0 0		NB-- 0 SB-- 0	
		ATSAC-1 or ATSAC+ATCS-2?				2				2				2				2			
		Override Capacity				0				0				0				0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	Left	255	1	158	0	255	158	39	310	1	188	0	310	1	188	0	310	1	188		
	Left-Through		1							1				1				1			
	Through	60	0	158	0	60	158	1	65	0	188	0	65	0	188	0	65	0	188		
	Through-Right		0							0				0				0			
	Right	281	1	182	5	286	187	2	300	1	194	5	305	1	198	0	305	1	198		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
SOUTHBOUND	Left	18	0	18	0	18	18	0	19	0	19	0	19	0	19	0	19	0	19		
	Left-Through		0							0				0				0			
	Through	146	0	215	0	146	215	4	159	0	232	0	159	0	232	0	159	0	232		
	Through-Right		0							0				0				0			
	Right	51	0	0	0	51	0	0	54	0	0	0	54	0	0	0	54	0	0		
	Left-Through-Right		1							1				1				1			
	Left-Right		0							0				0				0			
EASTBOUND	Left	9	1	9	0	9	9	0	10	1	10	0	10	1	10	0	10	1	10		
	Left-Through		0							0				0				0			
	Through	489	1	274	0	489	274	26	545	1	304	0	545	1	304	0	545	1	304		
	Through-Right		1							1				1				1			
	Right	58	0	58	0	58	58	0	62	0	62	0	62	0	62	0	62	0	62		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
WESTBOUND	Left	198	1	198	1	199	199	3	213	1	213	1	214	1	214	0	214	1	214		
	Left-Through		0							0				0				0			
	Through	1254	1	630	0	1254	630	27	1358	1	682	0	1358	1	682	0	1358	1	682		
	Through-Right		1							1				1				1			
	Right	5	0	5	0	5	5	0	5	0	5	0	5	0	5	0	5	0	5		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
CRITICAL VOLUMES		North-South: 397		397		North-South: 402		402		North-South: 426		426		North-South: 430		430		North-South: 430		430	
		East-West: 639		639		East-West: 639		639		East-West: 692		692		East-West: 692		692		East-West: 692		692	
		SUM: 1036				SUM: 1041				SUM: 1118				SUM: 1122				SUM: 1122			
VOLUME/CAPACITY (V/C) RATIO:				0.753				0.757				0.813				0.816				0.816	
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.653				0.657				0.713				0.716				0.716	
LEVEL OF SERVICE (LOS):				B				B				C				C				C	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

I/S #:	North-South Street:		Ivar Ave			Year of Count: 2017			Ambient Growth: (%):			1	Conducted by:		GTC		Date:		12/1/2016	
	4	East-West Street:		Yucca St			Projection Year: 2023			Peak Hour:			AM	Reviewed by:				Project:		J1522
No. of Phases						2						2						2		
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?						0						0						0		
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			0			NB-- 0 SB-- 0			0			NB-- 0 SB-- 0			0		
ATSAC-1 or ATSAC+ATCS-2?			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0		
Override Capacity						2						2						2		
						0						0						0		
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	29	0	29	0	29	29	0	31	0	31	0	31	0	31	0	31	0	31	
	Left-Through		0							0				0				0		
	Through	3	0	75	0	3	75	0	3	0	80	0	3	0	80	0	3	0	80	
	Through-Right		0							0				0				0		
	Right	43	0	0	0	43	0	0	46	0	0	0	46	0	0	0	46	0	0	
	Left-Through-Right		1							1				1				1		
Left-Right		0								0				0				0		
SOUTHBOUND	Left	2	0	2	0	2	2	0	2	0	2	0	2	0	2	0	2	0	2	
	Left-Through		0							0				0				0		
	Through	10	0	20	0	10	20	0	11	0	21	0	11	0	21	0	11	0	21	
	Through-Right		0							0				0				0		
	Right	8	0	0	0	8	0	0	8	0	0	0	8	0	0	0	8	0	0	
	Left-Through-Right		1							1				1				1		
Left-Right		0								0				0				0		
EASTBOUND	Left	8	1	8	0	8	8	0	8	1	8	0	8	1	8	0	8	1	8	
	Left-Through		0							0				0				0		
	Through	63	1	63	0	63	63	44	111	1	111	0	111	1	111	0	111	1	111	
	Through-Right		0							0				0				0		
	Right	48	1	48	0	48	48	0	51	1	51	0	51	1	51	0	51	1	51	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0				0		
WESTBOUND	Left	330	1	330	0	330	330	0	350	1	350	0	350	1	350	0	350	1	350	
	Left-Through		0							0				0				0		
	Through	175	1	175	0	175	175	29	215	1	215	0	215	1	215	0	215	1	215	
	Through-Right		0							0				0				0		
	Right	10	1	10	0	10	10	0	11	1	11	0	11	1	11	0	11	1	11	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0				0		
CRITICAL VOLUMES			North-South: 77			North-South: 77			North-South: 82				North-South: 82				North-South: 82			
			East-West: 393			East-West: 393			East-West: 461				East-West: 461				East-West: 461			
			SUM: 470			SUM: 470			SUM: 543				SUM: 543				SUM: 543			
VOLUME/CAPACITY (V/C) RATIO:			0.313			0.313			0.362				0.362				0.362			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.213			0.213			0.262				0.262				0.262			
LEVEL OF SERVICE (LOS):			A			A			A				A				A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.000	Δ v/c after mitigation:	0.000
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
5	East-West Street:	Yucca St	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	66	1	66	0	66	66	16	86	1	86	0	86	1	86	0	86	1	86	
	Left-Through		0							0				0				0		
	Through	350	1	248	0	350	248	48	420	1	302	0	420	1	302	0	420	1	302	
	Through-Right		1							1				1				1		
	Right	146	0	146	0	146	146	28	183	0	183	0	183	0	183	0	183	0	183	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	100	1	100	0	100	100	0	106	1	106	0	106	1	106	0	106	1	106	
	Left-Through		0							0				0				0		
	Through	1019	1	679	2	1021	680	108	1190	1	775	2	1192	1	776	0	1192	1	776	
	Through-Right		1							1				1				1		
	Right	338	0	338	0	338	338	0	359	0	359	0	359	0	359	0	359	0	359	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	5	1	5	0	5	5	0	5	1	5	0	5	1	5	0	5	1	5	
	Left-Through		0							0				0				0		
	Through	60	1	60	0	60	60	14	78	1	78	0	78	1	78	0	78	1	78	
	Through-Right		0							0				0				0		
	Right	38	1	5	0	38	5	22	62	1	19	0	62	1	19	0	62	1	19	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	78	1	78	0	78	78	33	116	1	116	0	116	1	116	0	116	1	116	
	Left-Through		0							0				0				0		
	Through	135	1	71	0	135	71	8	151	1	79	0	151	1	79	0	151	1	79	
	Through-Right		1							1				1				1		
	Right	7	0	7	0	7	7	0	7	0	7	0	7	0	7	0	7	0	7	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 745 East-West: 138 SUM: 883	North-South: 746 East-West: 138 SUM: 884	North-South: 861 East-West: 194 SUM: 1055	North-South: 862 East-West: 194 SUM: 1056	North-South: 862 East-West: 194 SUM: 1056	North-South: 862 East-West: 194 SUM: 1056	North-South: 862 East-West: 194 SUM: 1056	North-South: 862 East-West: 194 SUM: 1056										
VOLUME/CAPACITY (V/C) RATIO:			0.589	0.589	0.703	0.704	0.704	0.704	0.704	0.704										
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.489	0.489	0.603	0.604	0.604	0.604	0.604	0.604										
LEVEL OF SERVICE (LOS):			A	A	B	B	B	B	B	B										

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Argyle Ave			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
6		East-West Street: Yucca St			Projection Year: 2023			Peak Hour: AM				Reviewed by:				Project: J1522			
No. of Phases		2			2			2				2		2		2			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0				0		0		0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB--	0	SB--	1	NB--	0	SB--	1	NB--	0	SB--	1	NB--	0	SB--	1		
		EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0		
ATSAC-1 or ATSAC+ATCS-2?		2			2			2				2		2		2			
Override Capacity		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	9	0	9	0	9	9	10	20	0	20	0	20	0	20	0	20	0	20
	Left-Through		1							1			1				1		
	Through	143	0	79	20	163	89	45	197	0	119	20	217	0	129	0	217	0	129
	Through-Right		1							1			1				1		
	Right	5	0	79	0	5	89	15	20	0	119	0	20	0	129	0	20	0	129
	Left-Through-Right		0							0			0				0		
Left-Right		0							0			0				0			
SOUTHBOUND	Left	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3
	Left-Through		1							1			1				1		
	Through	206	0	105	1	207	105	0	219	0	111	1	220	0	112	0	220	0	112
	Through-Right		1							1			1				1		
	Right	1	1	0	0	1	0	1	2	1	0	0	2	1	0	0	2	1	0
	Left-Through-Right		0							0			0				0		
Left-Right		0							0			0				0			
EASTBOUND	Left	143	1	143	0	143	143	21	173	1	173	0	173	1	173	0	173	1	173
	Left-Through		0							0			0				0		
	Through	22	1	22	0	22	22	13	36	1	36	0	36	1	36	0	36	1	36
	Through-Right		0							0			0				0		
	Right	118	1	118	0	118	118	8	133	1	133	0	133	1	133	0	133	1	133
	Left-Through-Right		0							0			0				0		
Left-Right		0							0			0				0			
WESTBOUND	Left	39	1	39	0	39	39	18	59	1	59	0	59	1	59	0	59	1	59
	Left-Through		0							0			0				0		
	Through	137	0	173	0	137	173	30	175	0	265	0	175	0	265	0	175	0	265
	Through-Right		1							1			1				1		
	Right	36	0	0	0	36	0	52	90	0	0	0	90	0	0	0	90	0	0
	Left-Through-Right		0							0			0				0		
Left-Right		0							0			0				0			
CRITICAL VOLUMES		North-South: 114 East-West: 316 SUM: 430			North-South: 114 East-West: 316 SUM: 430			North-South: 131 East-West: 438 SUM: 569				North-South: 132 East-West: 438 SUM: 570				North-South: 132 East-West: 438 SUM: 570			
VOLUME/CAPACITY (V/C) RATIO:		0.287			0.287			0.379				0.380				0.380			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.187			0.187			0.279				0.280				0.280			
LEVEL OF SERVICE (LOS):		A			A			A				A				A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

V/S #:	North-South Street:		Gower St			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
	7	East-West Street:		Carlos Ave			Projection Year: 2023			Peak Hour: AM			Reviewed by:		Project: J1522					
No. of Phases			3			3			3			3		3		3				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2			2			2		2		2				
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0				
ATSAC-1 or ATSAC+ATCS-2?			2			2			2			2		2		2				
Override Capacity			0			0			0			0		0		0				
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	33	1	33	0	33	33	0	35	1	35	0	35	1	35	0	35	1	35	
	Left-Through		0							0				0				0		
	Through	322	1	169	5	327	172	34	376	1	197	5	381	1	199	0	381	1	199	
	Through-Right		1							1				1				1		
	Right	16	0	16	0	16	16	0	17	0	17	0	17	0	17	0	17	0	17	
	Left-Through-Right		0							0				0				0		
Left-Right		0							0				0				0			
SOUTHBOUND	Left	13	0	13	0	13	13	0	14	0	14	0	14	0	14	0	14	0	14	
	Left-Through		1							1				1				1		
	Through	836	0	455	2	838	456	46	933	0	506	2	935	0	507	0	935	0	507	
	Through-Right		1							1				1				1		
	Right	47	0	455	0	47	456	0	50	0	506	0	50	0	507	0	50	0	507	
	Left-Through-Right		0							0				0				0		
Left-Right		0							0				0				0			
EASTBOUND	Left	17	0	17	0	17	17	0	18	0	18	0	18	0	18	0	18	0	18	
	Left-Through		0							0				0				0		
	Through	6	0	60	0	6	60	0	6	0	63	0	6	0	63	0	6	0	63	
	Through-Right		0							0				0				0		
	Right	37	0	0	0	37	0	0	39	0	0	0	39	0	0	0	39	0	0	
	Left-Through-Right		1							1				1				1		
Left-Right		0							0				0				0			
WESTBOUND	Left	31	0	31	0	31	31	2	35	0	35	0	35	0	35	0	35	0	35	
	Left-Through		0							0				0				0		
	Through	4	0	67	0	4	67	0	4	0	73	0	4	0	73	0	4	0	73	
	Through-Right		0							0				0				0		
	Right	32	0	0	0	32	0	0	34	0	0	0	34	0	0	0	34	0	0	
	Left-Through-Right		1							1				1				1		
Left-Right		0							0				0				0			
CRITICAL VOLUMES			North-South: 488 East-West: 127 SUM: 615			North-South: 489 East-West: 127 SUM: 616			North-South: 541 East-West: 136 SUM: 677			North-South: 542 East-West: 136 SUM: 678			North-South: 542 East-West: 136 SUM: 678					
VOLUME/CAPACITY (V/C) RATIO:			0.432			0.432			0.475			0.476			0.476					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.332			0.332			0.375			0.376			0.376					
LEVEL OF SERVICE (LOS):			A			A			A			A			A					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δ v/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

I/S #:	North-South Street:		Ivar Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
	8	East-West Street:		Hollywood Blvd			Projection Year: 2023			Peak Hour: AM			Reviewed by:		Project: J1522					
No. of Phases			2			2			2			2		2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0				
Override Capacity			2			2			2			2		2		2				
			0			0			0			0		0		0				
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	15	0	15	0	15	15	0	16	0	16	0	16	0	16	0	16	0	16	
	Left-Through		0							0				0				0		
	Through	45	0	112	0	45	112	0	48	0	119	0	48	0	119	0	48	0	119	
	Through-Right		0							0				0				0		
	Right	52	0	0	0	52	0	0	55	0	0	0	55	0	0	0	55	0	0	
	Left-Through-Right		1							1				1				1		
Left-Right		0							0				0				0			
SOUTHBOUND	Left	12	0	12	0	12	12	0	13	0	13	0	13	0	13	0	13	0	13	
	Left-Through		0							0				0				0		
	Through	274	0	341	0	274	341	0	291	0	362	0	291	0	362	0	291	0	362	
	Through-Right		0							0				0				0		
	Right	55	0	0	0	55	0	0	58	0	0	0	58	0	0	0	58	0	0	
	Left-Through-Right		1							1				1				1		
Left-Right		0							0				0				0			
EASTBOUND	Left	20	1	20	0	20	20	0	21	1	21	0	21	1	21	0	21	1	21	
	Left-Through		0							0				0				0		
	Through	537	1	278	0	537	278	301	871	1	446	0	871	1	446	0	871	1	446	
	Through-Right		1							1				1				1		
	Right	19	0	19	0	19	19	0	20	0	20	0	20	0	20	0	20	0	20	
	Left-Through-Right		0							0				0				0		
Left-Right		0							0				0				0			
WESTBOUND	Left	76	1	76	0	76	76	0	81	1	81	0	81	1	81	0	81	1	81	
	Left-Through		0							0				0				0		
	Through	1082	1	563	5	1087	566	193	1342	1	695	5	1347	1	697	0	1347	1	697	
	Through-Right		1							1				1				1		
	Right	44	0	44	0	44	44	0	47	0	47	0	47	0	47	0	47	0	47	
	Left-Through-Right		0							0				0				0		
Left-Right		0							0				0				0			
CRITICAL VOLUMES			North-South: 356 East-West: 583 SUM: 939			North-South: 356 East-West: 586 SUM: 942			North-South: 378 East-West: 716 SUM: 1094				North-South: 378 East-West: 718 SUM: 1096				North-South: 378 East-West: 718 SUM: 1096			
VOLUME/CAPACITY (V/C) RATIO:			0.626			0.628			0.729				0.731				0.731			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.526			0.528			0.629				0.631				0.631			
LEVEL OF SERVICE (LOS):			A			A			B				B				B			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δ v/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
9	East-West Street:	Hollywood Blvd	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 3 WB-- 0		NB-- 0 SB-- 0 EB-- 3 WB-- 0		NB-- 0 SB-- 0 EB-- 3 WB-- 0		NB-- 0 SB-- 0 EB-- 3 WB-- 0											
			3		3		3		3											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	90	1	90	0	90	90	2	98	1	98	0	98	1	98	0	98	1	98	
	Left-Through		0							0				0				0		
	Through	530	2	265	0	530	265	71	634	2	317	0	634	2	317	0	634	2	317	
	Through-Right		0							0				0				0		
	Right	197	1	148	0	197	148	5	214	1	161	0	214	1	161	0	214	1	161	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	36	1	36	0	36	36	22	60	1	60	0	60	1	60	0	60	1	60	
	Left-Through		0							0				0				0		
	Through	1076	1	603	2	1078	604	96	1238	1	695	2	1240	1	696	0	1240	1	696	
	Through-Right		1							1				1				1		
	Right	130	0	130	0	130	130	14	152	0	152	0	152	0	152	0	152	0	152	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	23	1	23	0	23	23	16	40	1	40	0	40	1	40	0	40	1	40	
	Left-Through		0							0				0				0		
	Through	475	2	238	0	475	238	276	780	2	390	0	780	2	390	0	780	2	390	
	Through-Right		0							0				0				0		
	Right	60	1	0	0	60	0	10	74	1	0	0	74	1	0	0	74	1	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	99	1	99	0	99	99	1	106	1	106	0	106	1	106	0	106	1	106	
	Left-Through		0							0				0				0		
	Through	924	1	476	5	929	478	177	1158	1	598	5	1163	1	600	0	1163	1	600	
	Through-Right		1							1				1				1		
	Right	27	0	27	0	27	27	8	37	0	37	0	37	0	37	0	37	0	37	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 693	East-West: 499	SUM: 1192	North-South: 694	East-West: 501	SUM: 1195	North-South: 793	East-West: 638	SUM: 1431	North-South: 794	East-West: 640	SUM: 1434	North-South: 794	East-West: 640	SUM: 1434			
VOLUME/CAPACITY (V/C) RATIO:			0.836			0.839			1.004			1.006			1.006					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.736			0.739			0.904			0.906			0.906					
LEVEL OF SERVICE (LOS):			C			C			E			E			E					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Argyle Ave			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
10		East-West Street: Hollywood Blvd			Projection Year: 2023			Peak Hour: AM				Reviewed by:				Project: J1522			
No. of Phases		2			2			2				2		2		2			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0				0		0		0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0				NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0			
ATSAC-1 or ATSAC+ATCS-2?		EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0				EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0			
Override Capacity		2			2			2				2		2		2			
		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	32	1	32	5	37	37	0	34	1	34	5	39	1	39	0	39	1	39
	Left-Through		0							0				0				0	
	Through	81	1	81	20	101	101	17	103	1	103	20	123	1	123	0	123	1	123
	Through-Right		0							0				0				0	
	Right	41	1	0	0	41	0	4	48	1	0	0	48	1	0	0	48	1	0
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	55	1	55	0	55	55	12	70	1	70	0	70	1	70	0	70	1	70
	Left-Through		0							0				0				0	
	Through	225	1	225	1	226	226	0	239	1	239	1	240	1	240	0	240	1	240
	Through-Right		0							0				0				0	
	Right	46	1	9	0	46	9	15	64	1	13	0	64	1	13	0	64	1	13
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	75	1	75	0	75	75	22	102	1	102	0	102	1	102	0	102	1	102
	Left-Through		0							0				0				0	
	Through	513	2	257	0	513	257	236	781	2	391	0	781	2	391	0	781	2	391
	Through-Right		0							0				0				0	
	Right	125	1	109	0	125	107	0	133	1	116	0	133	1	114	0	133	1	114
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	182	1	182	0	182	182	11	204	1	204	0	204	1	204	0	204	1	204
	Left-Through		0							0				0				0	
	Through	1057	1	555	0	1057	555	231	1353	1	720	0	1353	1	720	0	1353	1	720
	Through-Right		1							1				1				1	
	Right	53	1	53	0	53	53	30	86	0	86	0	86	0	86	0	86	0	86
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
CRITICAL VOLUMES		North-South: 257 East-West: 630 SUM: 887			North-South: 263 East-West: 630 SUM: 893			North-South: 273 East-West: 822 SUM: 1095				North-South: 279 East-West: 822 SUM: 1101				North-South: 279 East-West: 822 SUM: 1101			
VOLUME/CAPACITY (V/C) RATIO:		0.591			0.595			0.730				0.734				0.734			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.491			0.495			0.630				0.634				0.634			
LEVEL OF SERVICE (LOS):		A			A			B				B				B			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Gower St		Year of Count:	2017		Ambient Growth: (%):	1		Conducted by:	GTC		Date:	12/1/2016	
11	East-West Street:	Hollywood Blvd		Projection Year:	2023		Peak Hour:	AM		Reviewed by:			Project:	J1522	
No. of Phases		2		2		2		2		2		2		2	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0		0		0		0		0		0		0	
Right Turns: FREE-1, NRTOR-2 or OLA-3?		0		0		0		0		0		0		0	
ATSAC-1 or ATSAC+ATCS-2?		0		0		0		0		0		0		0	
Override Capacity		2		2		2		2		2		2		2	
NB--		0		0		0		0		0		0		0	
SB--		0		0		0		0		0		0		0	
EB--		0		0		0		0		0		0		0	
WB--		0		0		0		0		0		0		0	
ATCS-1 or ATCS+ATCS-2?		2		2		2		2		2		2		2	
Override Capacity		0		0		0		0		0		0		0	
MOVEMENT		EXISTING CONDITION		EXISTING PLUS PROJECT		FUTURE CONDITION W/O PROJECT		FUTURE CONDITION W/ PROJECT		FUTURE W/ PROJECT W/ MITIGATION					
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	44	1	44	0	44	44	16	63	1	63	0	63	1	63
	Left-Through		0							0				0	
	Through	295	1	191	5	300	194	32	345	1	237	5	350	1	239
	Through-Right		1							1				1	
	Right	87	0	87	0	87	87	36	128	0	128	0	128	0	128
SOUTHBOUND	Left-Through-Right		0							0				0	
	Left-Right		0							0				0	
	Left	66	1	66	0	66	66	4	74	1	74	0	74	1	74
	Left-Through		0							0				0	
	Through	585	1	585	2	587	587	40	661	1	661	2	663	1	663
EASTBOUND	Through-Right		0							0				0	
	Right	360	1	332	0	360	332	4	386	1	356	0	386	1	356
	Left-Through-Right		0							0				0	
	Left-Right		0							0				0	
	Left	56	1	56	0	56	56	1	60	1	60	0	60	1	60
WESTBOUND	Left-Through		0							0				0	
	Through	463	1	254	5	468	257	213	704	1	394	5	709	1	396
	Through-Right		1							1				1	
	Right	45	0	45	0	45	45	35	83	0	83	0	83	0	83
	Left-Through-Right		0							0				0	
CRITICAL VOLUMES	Left-Right		0							0				0	
	Left	13	1	13	0	13	13	37	51	1	51	0	51	1	51
	Left-Through		0							0				0	
	Through	852	1	488	0	852	488	225	1129	1	631	0	1129	1	631
	Through-Right		1							1				1	
VOLUME/CAPACITY (V/C) RATIO:	Right	124	0	124	0	124	124	1	133	0	133	0	133	0	133
	Left-Through-Right		0							0				0	
	Left-Right		0							0				0	
	North-South:	629		631		724		726		726		726		726	
	East-West:	544		544		691		691		691		691		691	
SUM:	1173		1175		1415		1417		1417		1417		1417		
	0.782		0.783		0.943		0.945		0.945		0.945		0.945		
	0.682		0.683		0.843		0.845		0.845		0.845		0.845		
	B		B		D		D		D		D		D		

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Ivar Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016									
12	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522									
No. of Phases		2	2		2		2		2										
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0	0		0		0		0										
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0	NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0										
ATSAC-1 or ATSAC+ATCS-2?		EB-- 0 WB-- 0	EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0										
Override Capacity		2	2		2		2		2										
		0	0		0		0		0										
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	22	0	22	0	22	22	0	23	0	23	0	23	0	23	0	23	0	23
	Left-Through		0							0				0				0	
	Through	96	0	127	0	96	127	0	102	0	135	0	102	0	135	0	102	0	135
	Through-Right		0							0				0				0	
	Right	9	0	0	0	9	0	0	10	0	0	0	10	0	0	0	10	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3
	Left-Through		0							0				0				0	
	Through	389	0	416	0	389	416	0	413	0	441	0	413	0	441	0	413	0	441
	Through-Right		0							0				0				0	
	Right	24	0	0	0	24	0	0	25	0	0	0	25	0	0	0	25	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
EASTBOUND	Left	14	0	14	0	14	14	0	15	0	15	0	15	0	15	0	15	0	15
	Left-Through		0							0				0				0	
	Through	17	0	75	3	20	78	12	30	0	92	3	33	0	95	0	33	0	95
	Through-Right		0							0				0				0	
	Right	44	0	0	0	44	0	0	47	0	0	0	47	0	0	0	47	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
WESTBOUND	Left	11	0	11	0	11	11	0	12	0	12	0	12	0	12	0	12	0	12
	Left-Through		0							0				0				0	
	Through	15	0	41	20	35	61	4	20	0	48	20	40	0	68	0	40	0	68
	Through-Right		0							0				0				0	
	Right	15	0	0	0	15	0	0	16	0	0	0	16	0	0	0	16	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
CRITICAL VOLUMES		North-South: 438			North-South: 438			North-South: 464			North-South: 464			North-South: 464			North-South: 464		
		East-West: 86			East-West: 89			East-West: 104			East-West: 107			East-West: 107			East-West: 107		
		SUM: 524			SUM: 527			SUM: 568			SUM: 571			SUM: 571			SUM: 571		
VOLUME/CAPACITY (V/C) RATIO:			0.349			0.351			0.379				0.381				0.381		
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.249			0.251			0.279				0.281				0.281		
LEVEL OF SERVICE (LOS):			A			A			A				A				A		

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
13	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	52	1	52	0	52	52	0	55	1	55	0	55	1	55	0	55	1	55	
	Left-Through		0							0				0				0		
	Through	645	2	323	0	645	323	123	808	2	404	0	808	2	404	0	808	2	404	
	Through-Right		0							0				0				0		
	Right	96	1	56	0	96	55	1	103	1	59	0	103	1	58	0	103	1	58	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	33	1	33	2	35	35	0	35	1	35	2	37	1	37	0	37	1	37	
	Left-Through		0							0				0				0		
	Through	1275	1	669	0	1275	669	108	1461	1	765	0	1461	1	765	0	1461	1	765	
	Through-Right		1							1				1				1		
	Right	62	0	62	0	62	62	2	68	0	68	0	68	0	68	0	68	0	68	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	27	1	27	0	27	27	10	39	1	39	0	39	1	39	0	39	1	39	
	Left-Through		0							0				0				0		
	Through	58	0	126	3	61	129	0	62	0	134	3	65	0	137	0	65	0	137	
	Through-Right		1							1				1				1		
	Right	68	0	0	0	68	0	0	72	0	0	0	72	0	0	0	72	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	81	1	81	2	83	83	3	89	1	89	2	91	1	91	0	91	1	91	
	Left-Through		0							0				0				0		
	Through	98	0	243	20	118	263	1	105	0	259	20	125	0	279	0	125	0	279	
	Through-Right		1							1				1				1		
	Right	145	0	0	0	145	0	0	154	0	0	0	154	0	0	0	154	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 721 East-West: 270 SUM: 991	North-South: 721 East-West: 290 SUM: 1011	North-South: 820 East-West: 298 SUM: 1118	North-South: 820 East-West: 318 SUM: 1138	North-South: 820 East-West: 318 SUM: 1138	North-South: 820 East-West: 318 SUM: 1138	North-South: 820 East-West: 318 SUM: 1138											
VOLUME/CAPACITY (V/C) RATIO:			0.661	0.674	0.745	0.759	0.759	0.759	0.759											
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.561	0.574	0.645	0.659	0.659	0.659	0.659											
LEVEL OF SERVICE (LOS):			A	A	B	B	B	B	B											

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.014	Δv/c after mitigation:	0.014
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
14	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	24	1	24	0	24	24	0	25	1	25	0	25	1	25	0	25	1	25	
	Left-Through	79	0	105	0	79	117	19	103	0	131	0	103	0	143	0	103	0	143	
	Through-Right	26	1	0	12	38	0	0	28	0	0	12	40	0	0	0	40	0	0	
	Right		0																	
	Left-Through-Right		0																	
SOUTHBOUND	Left	9	1	9	5	14	14	0	10	1	10	5	15	1	15	0	15	1	15	
	Left-Through	435	0	571	-3	432	568	6	468	0	616	-3	465	0	613	0	465	0	613	
	Through-Right	136	1	0	0	136	0	4	148	0	0	0	148	0	0	0	148	0	0	
	Right		0																	
	Left-Through-Right		0																	
EASTBOUND	Left	62	1	62	0	62	62	2	68	1	68	0	68	1	68	0	68	1	68	
	Left-Through	40	0	101	18	58	107	0	42	0	107	18	60	0	113	0	60	0	113	
	Through-Right	61	1	0	-12	49	0	0	65	0	0	-12	53	0	0	0	53	0	0	
	Right		0																	
	Left-Through-Right		0																	
WESTBOUND	Left	20	0	20	22	42	42	0	21	0	21	22	43	0	43	0	43	0	43	
	Left-Through	40	0	100	22	62	169	0	42	0	105	22	64	0	174	0	64	0	174	
	Through-Right	40	0	0	25	65	0	0	42	0	0	25	67	0	0	0	67	0	0	
	Right		1																	
	Left-Through-Right		0																	
CRITICAL VOLUMES			North-South: 595	East-West: 162	SUM: 757	North-South: 592	East-West: 231	SUM: 823	North-South: 641	East-West: 173	SUM: 814	North-South: 638	East-West: 242	SUM: 880	North-South: 638	East-West: 242	SUM: 880			
VOLUME/CAPACITY (V/C) RATIO:			0.505			0.549			0.543			0.587			0.587					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.405			0.449			0.443			0.487			0.487					
LEVEL OF SERVICE (LOS):			A			A			A			A			A					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.044	Δv/c after mitigation:	0.044
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
15		East-West Street: Selma Ave			Projection Year: 2023			Peak Hour: AM				Reviewed by:				Project: J1522			
No. of Phases		4			4			4				4		4		4			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2				2		2		2			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		0			0			0				0		0		0			
ATSAC-1 or ATSAC+ATCS-2?		0			0			0				0		0		0			
ATSAC-1 or ATSAC+ATCS-2?		2			2			2				2		2		2			
Override Capacity		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	23	1	23	0	23	23	0	24	1	24	0	24	1	24	0	24	1	24
	Left-Through		0							0				0				0	
	Through	308	1	157	0	308	157	81	408	1	207	0	408	1	207	0	408	1	207
	Through-Right		1							1				1				1	
	Left-Through-Right	5	0	5	0	5	5	0	5	0	5	0	5	0	5	0	5	0	5
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	5	1	5	0	5	5	0	5	1	5	0	5	1	5	0	5	1	5
	Left-Through		0							0				0				0	
	Through	663	0	828	0	663	830	114	818	0	993	0	818	0	995	0	818	0	995
	Through-Right		1							1				1				1	
	Right	165	0	0	2	167	0	0	175	0	0	2	177	0	0	0	177	0	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	24	0	24	5	29	29	0	25	0	25	5	30	0	30	0	30	0	30
	Left-Through		0							0				0				0	
	Through	1	0	42	0	1	50	0	1	0	44	0	1	0	52	0	1	0	52
	Through-Right		0							0				0				0	
	Right	17	0	0	3	20	0	0	18	0	0	3	21	0	0	0	21	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
WESTBOUND	Left	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3
	Left-Through		0							0				0				0	
	Through	1	0	18	0	1	18	0	1	0	19	0	1	0	19	0	1	0	19
	Through-Right		0							0				0				0	
	Right	14	0	0	0	14	0	0	15	0	0	0	15	0	0	0	15	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 851 East-West: 60 SUM: 911			North-South: 853 East-West: 68 SUM: 921			North-South: 1017 East-West: 63 SUM: 1080				North-South: 1019 East-West: 71 SUM: 1090				North-South: 1019 East-West: 71 SUM: 1090			
VOLUME/CAPACITY (V/C) RATIO:		0.663			0.670			0.785				0.793				0.793			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.563			0.570			0.685				0.693				0.693			
LEVEL OF SERVICE (LOS):		A			A			B				B				B			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.008	Δv/c after mitigation:	0.008
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Vine St			Year of Count:			2017			Ambient Growth: (%):			1			Conducted by:		GTC			Date:		12/1/2016		
16		East-West Street:			Sunset Blvd			Projection Year:			2023			Peak Hour:			AM			Reviewed by:					Project:		J1522		
No. of Phases								4						4						4						4			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?								0						0						0						0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			
ATSAC-1 or ATSAC+ATCS-2?					EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			
Override Capacity								2						2						2						2			
								0						0						0						0			
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION										
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume							
NORTHBOUND	Left	92	1	92	0	92	92	2	100	1	100	0	100	1	100	0	100	1	100	0	100	1	100						
	Left-Through		0							0				0				0			0								
	Through	644	2	322	0	644	322	63	747	2	374	0	747	2	374	0	747	2	374	0	747	2	374						
	Through-Right		0							0				0				0			0								
	Right	210	1	1	0	210	1	42	265	1	0	0	265	1	0	0	265	1	0	0	265	1	0						
	Left-Through-Right		0							0				0				0			0								
SOUTHBOUND	Left	61	1	61	0	61	61	40	105	1	105	0	105	1	105	0	105	1	105	0	105	1	105						
	Left-Through		0							0				0				0			0								
	Through	1143	1	629	2	1145	630	62	1275	1	702	2	1277	1	703	0	1277	1	703	0	1277	1	703						
	Through-Right		1							1				1				1			1								
	Right	114	0	114	0	114	114	8	129	0	129	0	129	0	129	0	129	0	129	0	129	0	129						
	Left-Through-Right		0							0				0				0			0								
EASTBOUND	Left	33	1	33	0	33	33	11	46	1	46	0	46	1	46	0	46	1	46	0	46	1	46						
	Left-Through		0							0				0				0			0								
	Through	772	2	285	1	773	285	224	1043	2	378	1	1044	2	378	0	1044	2	378	0	1044	2	378						
	Through-Right		1							1				1				1			1								
	Right	82	0	82	0	82	82	4	91	0	91	0	91	0	91	0	91	0	91	0	91	0	91						
	Left-Through-Right		0							0				0				0			0								
WESTBOUND	Left	209	1	209	0	209	209	52	274	1	274	0	274	1	274	0	274	1	274	0	274	1	274						
	Left-Through		0							0				0				0			0								
	Through	1286	2	453	10	1296	456	201	1566	2	564	10	1576	2	568	0	1576	2	568	0	1576	2	568						
	Through-Right		1							1				1				1			1								
	Right	73	0	73	0	73	73	50	127	0	127	0	127	0	127	0	127	0	127	0	127	0	127						
	Left-Through-Right		0							0				0				0			0								
CRITICAL VOLUMES					North-South: 721 East-West: 494 SUM: 1215			North-South: 722 East-West: 494 SUM: 1216			North-South: 802 East-West: 652 SUM: 1454				North-South: 803 East-West: 652 SUM: 1455				North-South: 803 East-West: 652 SUM: 1455										
VOLUME/CAPACITY (V/C) RATIO:					0.884			0.884			1.057				1.058				1.058										
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.784			0.784			0.957				0.958				0.958										
LEVEL OF SERVICE (LOS):					C			C			E				E				E										

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

V/S #:	North-South Street:		Argyle Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
	17	East-West Street:		Sunset Blvd			Projection Year: 2023			Peak Hour: AM			Reviewed by:		Project: J1522					
No. of Phases			2			2			2			2		2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0				
Override Capacity			2			2			2			2		2		2				
			0			0			0			0		0		0				
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through		0							0				0				0		
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right		0							0				0				0		
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0				0		
SOUTHBOUND	Left	93	1	93	19	112	112	0	99	1	99	19	118	1	118	0	118	1	118	
	Left-Through		0							0				0				0		
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right		0							0				0				0		
	Right	183	1	122	10	193	131	6	200	1	125	10	210	1	135	0	210	1	135	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0				0		
EASTBOUND	Left	123	1	123	1	124	124	19	150	1	150	1	151	1	151	0	151	1	151	
	Left-Through		0							0				0				0		
	Through	866	3	289	0	866	289	330	1249	3	416	0	1249	3	416	0	1249	3	416	
	Through-Right		0							0				0				0		
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0				0		
WESTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through		0							0				0				0		
	Through	1344	2	483	0	1344	485	265	1692	2	602	0	1692	2	603	0	1692	2	603	
	Through-Right		1							1				1				1		
	Right	106	0	106	4	110	110	0	113	0	113	4	117	0	117	0	117	0	117	
	Left-Through-Right		0							0				0				0		
Left-Right		0								0				0				0		
CRITICAL VOLUMES			North-South: 122 East-West: 606 SUM: 728			North-South: 131 East-West: 609 SUM: 740			North-South: 125 East-West: 752 SUM: 877				North-South: 135 East-West: 754 SUM: 889				North-South: 135 East-West: 754 SUM: 889			
VOLUME/CAPACITY (V/C) RATIO:			0.485			0.493			0.585				0.593				0.593			
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.385			0.393			0.485				0.493				0.493			
LEVEL OF SERVICE (LOS):			A			A			A				A				A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.008	Δ v/c after mitigation:	0.008
Significant impacted?	NO	Fully mitigated?	N/A

V/S #:	North-South Street:		El Centro Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
	18	East-West Street:		Sunset Blvd			Projection Year: 2023			Peak Hour: AM			Reviewed by:		Project: J1522					
No. of Phases			2			2			2			2		2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0				
Override Capacity			2			2			2			2		2		2				
			0			0			0			0		0		0				
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	35	0	35	0	35	35	0	37	0	37	0	37	0	37	0	37	0	37	
	Left-Through		0							0			0				0			
	Through	50	0	157	1	51	158	1	54	0	167	1	55	0	168	0	55	0	168	
	Through-Right		0							0			0				0			
	Right	72	0	0	0	72	0	0	76	0	0	0	76	0	0	0	76	0	0	
	Left-Through-Right		1							1				1				1		
	Left-Right		0							0			0				0			
SOUTHBOUND	Left	4	0	4	10	14	14	3	7	0	7	10	17	0	17	0	17	0	17	
	Left-Through		0							0			0				0			
	Through	42	0	76	0	42	86	1	46	0	85	0	46	0	95	0	46	0	95	
	Through-Right		0							0			0				0			
	Right	30	0	0	0	30	0	0	32	0	0	0	32	0	0	0	32	0	0	
	Left-Through-Right		1							1				1				1		
	Left-Right		0							0			0				0			
EASTBOUND	Left	25	1	25	0	25	25	0	27	1	27	0	27	1	27	0	27	1	27	
	Left-Through		0							0			0				0			
	Through	912	2	327	19	931	334	420	1388	2	487	19	1407	2	494	0	1407	2	494	
	Through-Right		1							1			1				1			
	Right	70	0	70	0	70	70	0	74	0	74	0	74	0	74	0	74	0	74	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0			0				0			
WESTBOUND	Left	56	1	56	0	56	56	0	59	1	59	0	59	1	59	0	59	1	59	
	Left-Through		0							0			0				0			
	Through	1630	2	558	4	1634	559	349	2079	2	709	4	2083	2	710	0	2083	2	710	
	Through-Right		1							1			1				1			
	Right	43	0	43	1	44	44	1	47	0	47	1	48	0	48	0	48	0	48	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0			0				0			
CRITICAL VOLUMES			North-South: 161 East-West: 583 SUM: 744			North-South: 172 East-West: 584 SUM: 756			North-South: 174 East-West: 736 SUM: 910			North-South: 185 East-West: 737 SUM: 922			North-South: 185 East-West: 737 SUM: 922					
VOLUME/CAPACITY (V/C) RATIO:			0.496			0.504			0.607			0.615			0.615					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.396			0.404			0.507			0.515			0.515					
LEVEL OF SERVICE (LOS):			A			A			A			A			A					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.008	Δ v/c after mitigation:	0.008
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
19		East-West Street: Sunset Blvd			Projection Year: 2023			Peak Hour: AM			Reviewed by:				Project: J1522				
No. of Phases		3			3			3			3		3		3				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0		
		EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0		
ATSAC-1 or ATSAC+ATCS-2?		2			2			2			2		2		2				
Override Capacity		0			0			0			0		0		0				
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	43	1	43	0	43	43	20	66	1	66	0	66	1	66	0	66	1	66
	Left-Through		0							0				0				0	
	Through	314	0	387	0	314	387	29	362	0	441	0	362	0	441	0	362	0	441
	Through-Right		1							1				1				1	
	Right	73	0	0	0	73	0	2	79	0	0	0	79	0	0	0	79	0	0
	Left-Through-Right		0							0				0				0	
SOUTHBOUND	Left		0							0				0				0	
	Left-Through	81	1	81	0	81	81	1	87	1	87	0	87	1	87	0	87	1	87
	Through	490	0	540	3	493	543	52	572	0	686	3	575	0	689	0	575	0	689
	Through-Right		1							1				1				1	
	Right	50	0	0	0	50	0	61	114	0	0	0	114	0	0	0	114	0	0
	Left-Through-Right		0							0				0				0	
EASTBOUND	Left		0							0				0				0	
	Left-Through	54	1	54	0	54	54	52	109	1	109	0	109	1	109	0	109	1	109
	Through	804	2	289	30	834	299	325	1178	2	420	30	1208	2	430	0	1208	2	430
	Through-Right		1							1				1				1	
	Right	62	0	62	0	62	62	15	81	0	81	0	81	0	81	0	81	0	81
	Left-Through-Right		0							0				0				0	
WESTBOUND	Left		0							0				0				0	
	Left-Through	139	1	139	0	139	139	6	154	1	154	0	154	1	154	0	154	1	154
	Through	1644	2	563	4	1648	564	356	2101	2	716	4	2105	2	718	0	2105	2	718
	Through-Right		1							1				1				1	
	Right	45	0	45	0	45	45	0	48	0	48	0	48	0	48	0	48	0	48
	Left-Through-Right		0							0				0				0	
CRITICAL VOLUMES		North-South: 583 East-West: 617 SUM: 1200			North-South: 586 East-West: 618 SUM: 1204			North-South: 752 East-West: 825 SUM: 1577			North-South: 755 East-West: 827 SUM: 1582			North-South: 755 East-West: 827 SUM: 1582					
VOLUME/CAPACITY (V/C) RATIO:		0.842			0.845			1.107			1.110			1.110					
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.742			0.745			1.007			1.010			1.010					
LEVEL OF SERVICE (LOS):		C			C			F			F			F					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Bronson Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
20	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	63	1	63	0	63	63	0	67	1	67	0	67	1	67	0	67	1	67	
	Left-Through		0							0			0		0		0			
	Through	142	0	277	0	142	277	22	173	0	316	0	173	0	316	0	173	0	316	
	Through-Right		1							1			1		1		1			
	Right	135	0	0	0	135	0	0	143	0	0	0	143	0	0	0	143	0	0	
	Left-Through-Right		0							0			0		0		0		0	
	Left-Right		0							0			0		0		0		0	
SOUTHBOUND	Left	66	1	66	0	66	66	13	83	1	83	0	83	1	83	0	83	1	83	
	Left-Through		0							0			0		0		0			
	Through	313	0	493	0	313	493	24	356	0	566	0	356	0	566	0	356	0	566	
	Through-Right		1							1			1		1		1			
	Right	180	0	0	0	180	0	19	210	0	0	0	210	0	0	0	210	0	0	
	Left-Through-Right		0							0			0		0		0		0	
	Left-Right		0							0			0		0		0		0	
EASTBOUND	Left	46	1	46	0	46	46	41	90	1	90	0	90	1	90	0	90	1	90	
	Left-Through		0							0			0		0		0			
	Through	875	2	297	30	905	307	311	1240	2	419	30	1270	2	429	0	1270	2	429	
	Through-Right		1							1			1		1		1			
	Right	15	0	15	0	15	15	0	16	0	16	0	16	0	16	0	16	0	16	
	Left-Through-Right		0							0			0		0		0		0	
	Left-Right		0							0			0		0		0		0	
WESTBOUND	Left	83	1	83	0	83	83	0	88	1	88	0	88	1	88	0	88	1	88	
	Left-Through		0							0			0		0		0			
	Through	1582	2	550	4	1586	552	350	2029	2	717	4	2033	2	718	0	2033	2	718	
	Through-Right		1							1			1		1		1			
	Right	69	0	69	0	69	69	48	121	0	121	0	121	0	121	0	121	0	121	
	Left-Through-Right		0							0			0		0		0		0	
	Left-Right		0							0			0		0		0		0	
CRITICAL VOLUMES			North-South: 556	East-West: 596	SUM: 1152	North-South: 556	East-West: 598	SUM: 1154	North-South: 633	East-West: 807	SUM: 1440	North-South: 633	East-West: 808	SUM: 1441	North-South: 633	East-West: 808	SUM: 1441			
VOLUME/CAPACITY (V/C) RATIO:			0.768			0.769			0.960			0.961			0.961					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.668			0.669			0.860			0.861			0.861					
LEVEL OF SERVICE (LOS):			B			B			D			D			D					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

VS #:	North-South Street:		Van Ness Ave			Year of Count: 2017			Ambient Growth: (%):			1	Conducted by:		GTC		Date:		12/1/2016		
	21	East-West Street:		Sunest Blvd			Projection Year: 2023			Peak Hour:			AM	Reviewed by:				Project:		J1522	
		No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				2				2				2				2		2	
		Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0		0				0				0				0		0	
		ATSAC-1 or ATSAC+ATCS-2?				2				2				2				2		2	
		Override Capacity				0				0				0				0		0	
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	Left	54	1	54	0	54	54	11	68	1	68	0	68	1	68	0	68	1	68		
	Left-Through		0							0				0				0			
	Through	14	0	185	0	14	185	0	15	0	202	0	15	0	202	0	15	0	202		
	Through-Right		1							1				1				1			
	Right	171	0	0	0	171	0	5	187	0	0	0	187	0	0	0	187	0	0		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
SOUTHBOUND	Left	328	1	328	0	328	328	5	353	1	353	0	353	1	353	0	353	1	353		
	Left-Through		0							0				0				0			
	Through	198	0	233	0	198	233	43	253	0	290	0	253	0	290	0	253	0	290		
	Through-Right		1							1				1				1			
	Right	35	0	0	0	35	0	0	37	0	0	0	37	0	0	0	37	0	0		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
EASTBOUND	Left	5	1	5	0	5	5	0	5	1	5	0	5	1	5	0	5	1	5		
	Left-Through		0							0				0				0			
	Through	1066	2	369	30	1096	379	300	1432	2	500	30	1462	2	510	0	1462	2	510		
	Through-Right		1							1				1				1			
	Right	41	0	41	0	41	41	24	68	0	68	0	68	0	68	0	68	0	68		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
WESTBOUND	Left	73	1	73	0	73	73	40	117	1	117	0	117	1	117	0	117	1	117		
	Left-Through		0							0				0				0			
	Through	1618	2	547	4	1622	548	385	2103	2	709	4	2107	2	710	0	2107	2	710		
	Through-Right		1							1				1				1			
	Right	23	0	23	0	23	23	0	24	0	24	0	24	0	24	0	24	0	24		
	Left-Through-Right		0							0				0				0			
	Left-Right		0							0				0				0			
CRITICAL VOLUMES		North-South: 513 East-West: 552 SUM: 1065		North-South: 513 East-West: 553 SUM: 1066		North-South: 555 East-West: 714 SUM: 1269		North-South: 555 East-West: 715 SUM: 1270		North-South: 555 East-West: 715 SUM: 1270		North-South: 555 East-West: 715 SUM: 1270									
VOLUME/CAPACITY (V/C) RATIO: V/C LESS ATSAC/ATCS ADJUSTMENT: LEVEL OF SERVICE (LOS):		0.710 0.610 B		0.711 0.611 B		0.846 0.746 C		0.847 0.747 C													

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δ v/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Wilton Pl	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
22	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	AM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	64	1	64	0	64	64	7	75	1	75	0	75	1	75	0	75	1	75	
	Left-Through		0							0				0				0		
	Through	240	1	195	0	240	195	1	256	1	208	0	256	1	208	0	256	1	208	
	Through-Right		1							1				1				1		
	Right	149	0	149	0	149	149	1	159	0	159	0	159	0	159	0	159	0	159	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	143	1	143	0	143	143	12	164	1	164	0	164	1	164	0	164	1	164	
	Left-Through		0							0				0				0		
	Through	538	1	318	0	538	318	2	573	1	341	0	573	1	341	0	573	1	341	
	Through-Right		1							1				1				1		
	Right	98	0	98	0	98	98	4	108	0	108	0	108	0	108	0	108	0	108	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	70	1	70	0	70	70	1	75	1	75	0	75	1	75	0	75	1	75	
	Left-Through		0							0				0				0		
	Through	1107	2	438	5	1112	440	151	1326	2	516	5	1331	2	518	0	1331	2	518	
	Through-Right		1							1				1				1		
	Right	208	0	208	0	208	208	1	222	0	222	0	222	0	222	0	222	0	222	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	118	1	118	0	118	118	0	125	1	125	0	125	1	125	0	125	1	125	
	Left-Through		0							0				0				0		
	Through	793	2	397	1	794	397	185	1027	2	514	1	1028	2	514	0	1028	2	514	
	Through-Right		0							0				0				0		
	Right	105	1	34	0	105	34	3	114	1	32	0	114	1	32	0	114	1	32	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 382		North-South: 382		North-South: 416		North-South: 416		North-South: 416		North-South: 416		North-South: 416		North-South: 416		North-South: 416	
			East-West: 556		East-West: 558		East-West: 641		East-West: 643		East-West: 643		East-West: 643		East-West: 643		East-West: 643		East-West: 643	
			SUM: 938		SUM: 940		SUM: 1057		SUM: 1059		SUM: 1059		SUM: 1059		SUM: 1059		SUM: 1059		SUM: 1059	
VOLUME/CAPACITY (V/C) RATIO:			0.625		0.627		0.705		0.706		0.706		0.706		0.706		0.706		0.706	
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.525		0.527		0.605		0.606		0.606		0.606		0.606		0.606		0.606	
LEVEL OF SERVICE (LOS):			A		A		B		B		B		B		B		B		B	

REMARKS:

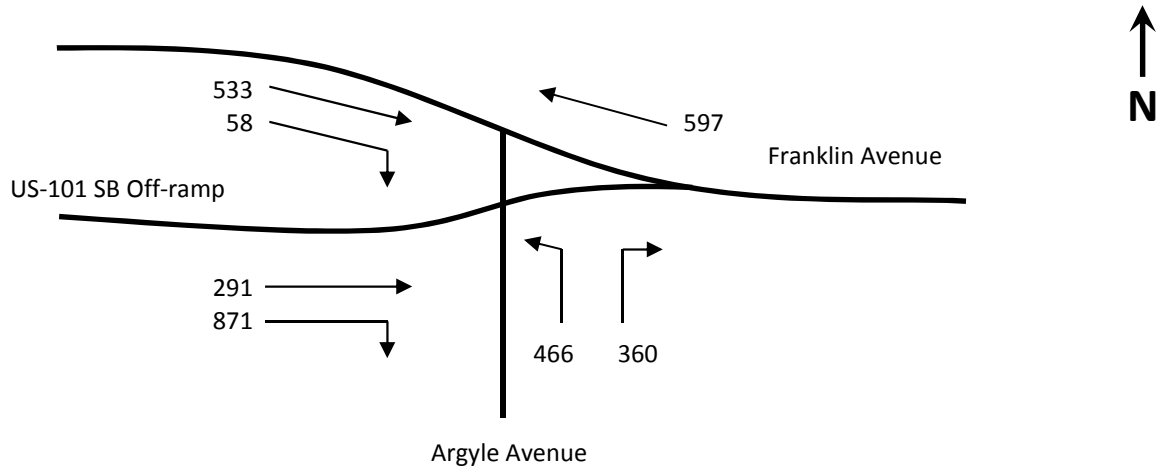
Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Existing with Project Conditions - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{597}{2} = 299 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{533}{2} = 267 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 291$$

$$\text{Critical Volume \#1 (CV1): } 299$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{466 + 360}{2} = \frac{826}{2} = 413 \quad \text{or}$$

$$\text{Northbound Right: } 360 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 58$$

$$\text{Critical Volume \#2 (CV2): } 413$$

$$\text{Critical Volume: } 299 + 413 = 712$$

$$\text{Intersection V/C: } \frac{712}{1500} = 0.475$$

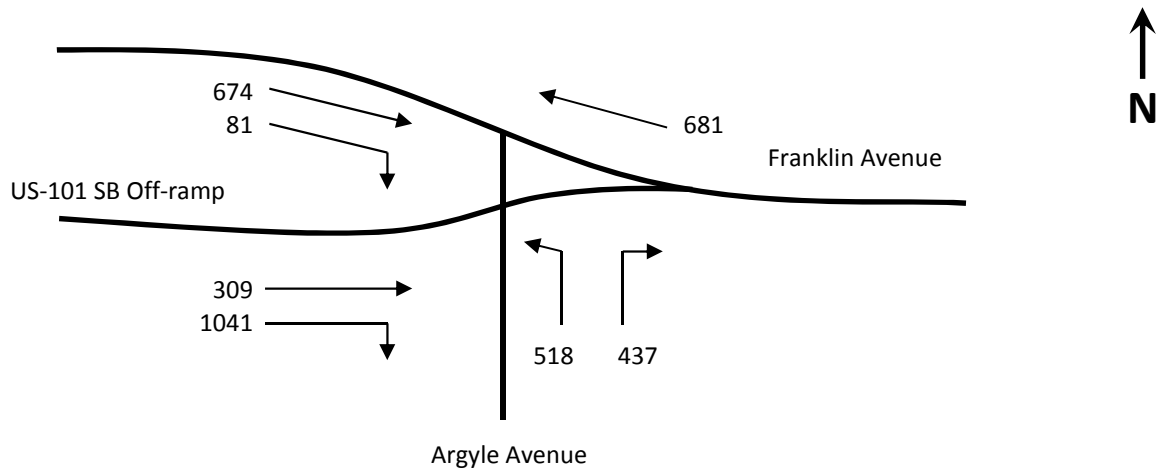
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } 0.375$$

$$\text{Intersection LOS: } A$$

Intersection 1 - Vine Street & US-101 SB Off-Ramp/Franklin Avenue

Future with Project Conditions (Year 2023) - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound through traffic on Franklin Avenue and eastbound traffic from US-101 southbound off-ramp to eastbound Franklin Avenue

$$\text{Westbound Through: } \frac{681}{2} = 341 \quad \text{or}$$

$$\text{Eastbound Through (Franklin): } \frac{674}{2} = 337 \quad \text{or}$$

$$\text{Eastbound Through (US-101): } 309$$

$$\text{Critical Volume \#1 (CV1): } \mathbf{341}$$

- 2) Critical volume calculation for northbound traffic on Argyle Avenue and eastbound right turns from Franklin Avenue

$$\text{Northbound Left + Right: } \frac{518 + 437}{2} = \frac{955}{2} = 478 \quad \text{or}$$

$$\text{Northbound Right: } 437 \quad \text{or}$$

$$\text{Eastbound Right (Franklin): } 81$$

$$\text{Critical Volume \#2 (CV2): } \mathbf{478}$$

$$\text{Critical Volume: } 341 + 478 = \mathbf{819}$$

$$\text{Intersection V/C: } \frac{819}{1500} = \mathbf{0.546}$$

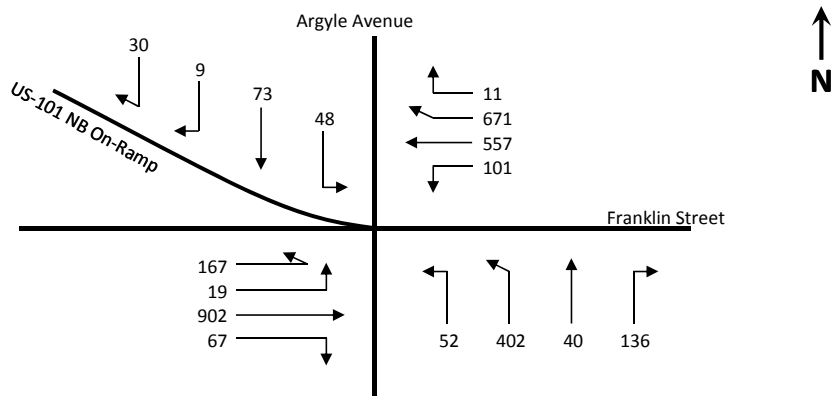
$$\text{ATSAC/ATCS Credit: } 0.10$$

$$\text{Final intersection V/C: } \mathbf{0.446}$$

$$\text{Intersection LOS: } \mathbf{A}$$

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Existing with Project Conditions - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $167 + 19 = 186$ and

Westbound Throughs + Rights:

$$\frac{557 + 671 + 11}{2} = \frac{1239}{2} = 620 \quad \text{or}$$

Westbound Rights: $671 + 11 = 682$ or

Westbound Lefts: 101 and

Eastbound Throughs: $\frac{902}{2} = 451$ or

Eastbound Rights: 67

Critical Volume #1 (CV1): **868**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{52 + 402 + 40}{2} = \frac{494}{2} = 247 \quad \text{or}$$

Northbound Rights: $136 - 0.5 \times \text{WBL} = 85$

Critical Volume #2 (CV2): **247**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 48 or

Southbound Throughs + Rights:

$$\frac{73 + 9 + 30}{2} = \frac{112}{2} = 56 \quad \text{or}$$

Southbound Rights: $9 + 30 = 39$

Critical Volume #3 (CV3): **56**

Critical Volume: $868 + 247 + 56 = 1171$

Intersection V/C: $\frac{1171}{1375} = 0.852$

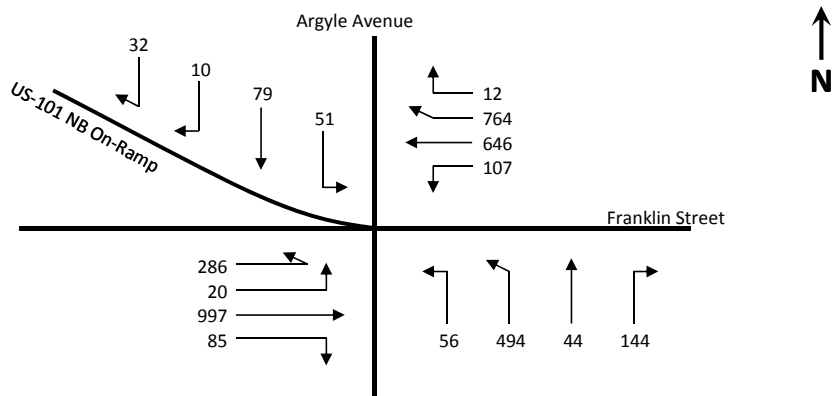
ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.752**

Intersection LOS: **C**

Intersection 2 - Argyle Avenue/US-101 Northbound On-Ramp & Franklin Street

Future with Project Conditions (Year 2023) - PM Peak Hour



- 1) Critical volume calculation for eastbound/westbound traffic on Franklin Street

Eastbound Lefts to Argyle Avenue and US-101 Northbound On-Ramp:
 $286 + 20 = 306$ and

Westbound Throughs + Rights:

$$\frac{646 + 764 + 12}{2} = \frac{1422}{2} = 711 \quad \text{or}$$

Westbound Rights: $764 + 12 = 776$ or

Westbound Lefts: 107 and

Eastbound Throughs: $\frac{997}{2} = 499$ or

Eastbound Rights: 85

Critical Volume #1 (CV1): **1082**

- 2) Critical volume calculation for northbound traffic on Argyle Avenue

Northbound Lefts + Throughs:

$$\frac{56 + 494 + 44}{2} = \frac{594}{2} = 297 \quad \text{or}$$

Northbound Rights: $144 - 0.5 \times \text{WBL} = 90$

Critical Volume #2 (CV2): **297**

- 3) Critical volume calculation for southbound traffic on Argyle Avenue

Southbound Lefts: 51 or

Southbound Throughs + Rights:

$$\frac{79 + 10 + 32}{2} = \frac{121}{2} = 61 \quad \text{or}$$

Southbound Rights: $10 + 32 = 42$

Critical Volume #3 (CV3): **61**

Critical Volume: $1082 + 297 + 61 = 1440$

Intersection V/C: $\frac{1440}{1375} = 1.047$

ATSAC/ATCS Credit: 0.10

Final intersection V/C: **0.947**

Intersection LOS: **E**

PM - Supermarket.xls

PM - Supermarket.xls

V/S #:	North-South Street:		Vine St			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
	East-West Street:		Yucca St			Projection Year: 2023			Peak Hour: PM			Reviewed by:				Project: J1522				
No. of Phases			2			2			2					2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0			0					0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?			2			2			2					2		2				
Override Capacity			0			0			0					0		0				
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	210	1	210	0	210	210	28	251	1	251	0	251	1	251	0	251	1	251	
	Left-Through		0							0				0				0		
	Through	752	1	484	0	752	484	80	878	1	576	0	878	1	576	0	878	1	576	
	Through-Right		1							1				1				1		
	Right	215	0	215	0	215	215	46	274	0	274	0	274	0	274	0	274	0	274	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	39	1	39	0	39	39	0	41	1	41	0	41	1	41	0	41	1	41	
	Left-Through		0							0				0				0		
	Through	824	1	434	19	843	443	147	1022	1	534	19	1041	1	544	0	1041	1	544	
	Through-Right		1							1				1				1		
	Right	43	0	43	0	43	43	0	46	0	46	0	46	0	46	0	46	0	46	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	51	1	51	0	51	51	0	54	1	54	0	54	1	54	0	54	1	54	
	Left-Through		0							0				0				0		
	Through	138	1	138	0	138	138	11	157	1	157	0	157	1	157	0	157	1	157	
	Through-Right		0							0				0				0		
	Right	47	1	0	0	47	0	32	82	1	0	0	82	1	0	0	82	1	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	52	1	52	0	52	52	48	103	1	103	0	103	1	103	0	103	1	103	
	Left-Through		0							0				0				0		
	Through	78	1	45	0	78	45	16	99	1	56	0	99	1	56	0	99	1	56	
	Through-Right		1							1				1				1		
	Right	11	0	11	0	11	11	0	12	0	12	0	12	0	12	0	12	0	12	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 644 East-West: 190 SUM: 834			North-South: 653 East-West: 190 SUM: 843			North-South: 785 East-West: 260 SUM: 1045			North-South: 795 East-West: 260 SUM: 1055			North-South: 795 East-West: 260 SUM: 1055					
VOLUME/CAPACITY (V/C) RATIO:			0.556			0.562			0.697			0.703			0.703					
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.456			0.462			0.597			0.603			0.603					
LEVEL OF SERVICE (LOS):			A			A			A			B			B					

REMARKS:

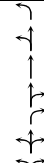
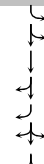
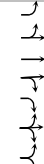
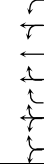
Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.006	Δ v/c after mitigation:	0.006
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave		Year of Count:	2017		Ambient Growth: (%)	1		Conducted by:	GTC		Date:	12/1/2016								
	East-West Street:	Yucca St		Projection Year:	2023		Peak Hour:	PM		Reviewed by:			Project:	J1522								
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity				NB-- 0 SB-- 1 EB-- 0 WB-- 0 2 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0 2 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0 2 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0 2 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0 2 0		NB-- 0 SB-- 1 EB-- 0 WB-- 0 2 0								
MOVEMENT				EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
				Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND		Left	23	0	23	0	23	23	15	39	0	39	0	39	0	39	0	39	0	39	0	39
		Left-Through		1								1					1				1	
		Through	432	0	237	12	444	243	54	513	0	298	12	525	0	304	0	525	0	304	0	304
		Through-Right		1								1					1				1	
		Right	18	0	237	0	18	243	24	43	0	298	0	43	0	304	0	43	0	304	0	304
SOUTHBOUND		Left	9	0	9	0	9	9	0	10	0	10	0	10	0	10	0	10	0	10	0	10
		Left-Through		1								1					1				1	
		Through	111	0	65	5	116	67	1	119	0	70	5	124	0	72	0	124	0	72	0	72
		Through-Right		1								1					1				1	
		Right	1	1	0	0	1	0	2	3	1	0	0	3	1	0	0	3	1	0	0	3
EASTBOUND		Left	246	1	246	0	246	246	34	295	1	295	0	295	1	295	0	295	1	295	0	295
		Left-Through		0								0				0				0		
		Through	86	1	86	0	86	86	10	101	1	101	0	101	1	101	0	101	1	101	0	101
		Through-Right		0								0				0				0		
		Right	63	1	63	0	63	63	13	80	1	80	0	80	1	80	0	80	1	80	0	80
WESTBOUND		Left	8	1	8	0	8	8	14	22	1	22	0	22	1	22	0	22	1	22	0	22
		Left-Through		0								0				0				0		
		Through	55	0	132	0	55	132	47	105	0	226	0	105	0	226	0	105	0	226	0	226
		Through-Right		1								1				1				1		
		Right	77	0	0	0	77	0	39	121	0	0	0	121	0	0	0	121	0	0	0	0
CRITICAL VOLUMES				North-South: 246 East-West: 378 SUM: 624		North-South: 252 East-West: 378 SUM: 630		North-South: 308 East-West: 521 SUM: 829		North-South: 314 East-West: 521 SUM: 835		North-South: 314 East-West: 521 SUM: 835		North-South: 314 East-West: 521 SUM: 835								
VOLUME/CAPACITY (V/C) RATIO:				0.416		0.420		0.553		0.557		0.557		0.557								
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.316		0.320		0.453		0.457		0.457		0.457								
LEVEL OF SERVICE (LOS):				A		A		A		A		A		A								

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
7		East-West Street: Carlos Ave			Projection Year: 2023			Peak Hour: PM				Reviewed by:				Project: J1522			
No. of Phases		3			3			3				3		3		3			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2				2		2		2			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0		
		EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0		
ATSAC-1 or ATSAC+ATCS-2?		2			2			2				2		2		2			
Override Capacity		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	19	1	19	0	19	19	0	20	1	20	0	20	1	20	0	20	1	20
	Left-Through		0							0				0				0	
	Through	750	1	382	3	753	383	66	862	1	439	3	865	1	441	0	865	1	441
	Through-Right		1							1				1				1	
	Right	13	0	13	0	13	13	2	16	0	16	0	16	0	16	0	16	0	16
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	16	0	16	0	16	16	0	17	0	17	0	17	0	17	0	17	0	17
	Left-Through		1							1				1				1	
	Through	536	0	312	11	547	317	43	612	0	352	11	623	0	358	0	623	0	358
	Through-Right		1							1				1				1	
	Right	23	0	312	0	23	317	0	24	0	352	0	24	0	358	0	24	0	358
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	12	0	12	0	12	12	0	13	0	13	0	13	0	13	0	13	0	13
	Left-Through		0							0				0				0	
	Through	0	0	43	0	0	43	0	0	0	46	0	0	0	46	0	0	0	46
	Through-Right		0							0				0				0	
	Right	31	0	0	0	31	0	0	33	0	0	0	33	0	0	0	33	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
WESTBOUND	Left	11	0	11	0	11	11	1	13	0	13	0	13	0	13	0	13	0	13
	Left-Through		0							0				0				0	
	Through	2	0	70	0	2	70	0	2	0	76	0	2	0	76	0	2	0	76
	Through-Right		0							0				0				0	
	Right	57	0	0	0	57	0	0	61	0	0	0	61	0	0	0	61	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 398 East-West: 113 SUM: 511			North-South: 399 East-West: 113 SUM: 512			North-South: 456 East-West: 122 SUM: 578				North-South: 458 East-West: 122 SUM: 580				North-South: 458 East-West: 122 SUM: 580			
VOLUME/CAPACITY (V/C) RATIO:		0.359			0.359			0.406				0.407				0.407			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.259			0.259			0.306				0.307				0.307			
LEVEL OF SERVICE (LOS):		A			A			A				A				A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.001	Δv/c after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

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Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
10	East-West Street:	Hollywood Blvd	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	38	1	38	4	42	42	0	40	1	40	4	44	1	44	0	44	1	44	
	Left-Through		0							0				0				0		
	Through	287	1	287	12	299	299	17	322	1	322	12	334	1	334	0	334	1	334	
	Through-Right		0							0				0				0		
	Right	45	1	11	0	45	11	13	61	1	20	0	61	1	20	0	61	1	20	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	37	1	37	0	37	37	17	56	1	56	0	56	1	56	0	56	1	56	
	Left-Through		0							0				0				0		
	Through	124	1	124	5	129	129	0	132	1	132	5	137	1	137	0	137	1	137	
	Through-Right		0							0				0				0		
	Right	65	1	10	0	65	10	11	80	1	3	0	80	1	3	0	80	1	3	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	111	1	111	0	111	111	37	155	1	155	0	155	1	155	0	155	1	155	
	Left-Through		0							0				0				0		
	Through	931	2	466	0	931	466	323	1311	2	656	0	1311	2	656	0	1311	2	656	
	Through-Right		0							0				0				0		
	Right	169	1	150	8	177	156	0	179	1	159	8	187	1	165	0	187	1	165	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	68	1	68	0	68	68	11	83	1	83	0	83	1	83	0	83	1	83	
	Left-Through		0							0				0				0		
	Through	725	1	436	0	725	436	356	1126	1	660	0	1126	1	660	0	1126	1	660	
	Through-Right		1							1				1				1		
	Right	147	0	147	0	147	147	38	194	0	194	0	194	0	194	0	194	0	194	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 324		324	North-South: 336		336	North-South: 378		378	North-South: 390		390	North-South: 390		390	North-South: 390		390
			East-West: 547		547	East-West: 547		547	East-West: 815		815	East-West: 815		815	East-West: 815		815	East-West: 815		815
			SUM: 871		871	SUM: 883		883	SUM: 1193		1193	SUM: 1205		1205	SUM: 1205		1205	SUM: 1205		1205
VOLUME/CAPACITY (V/C) RATIO:				0.581		0.589		0.589		0.795		0.803		0.803		0.803		0.803		0.803
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.481		0.489		0.489		0.695		0.703		0.703		0.703		0.703		0.703
LEVEL OF SERVICE (LOS):				A		A		A		B		C		C		C		C		C

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.008	Δv/c after mitigation:	0.008
Significant impacted?	NO	Fully mitigated?	N/A

V/S #:	North-South Street:		Gower St			Year of Count: 2017			Ambient Growth: (%):			1		Conducted by:		GTC		Date:		12/1/2016		
	11	East-West Street:		Hollywood Blvd			Projection Year: 2023			Peak Hour:			PM		Reviewed by:				Project:		J1522	
No. of Phases						2						2				2					2	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?						0						0				0					0	
Right Turns: FREE-1, NRTOR-2 or OLA-3?			NB-- 0 SB-- 0			0			NB-- 0 SB-- 0			0		NB-- 0 SB-- 0		0		NB-- 0 SB-- 0			0	
ATSAC-1 or ATSAC+ATCS-2?			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0		EB-- 0 WB-- 0		0		EB-- 0 WB-- 0			0	
Override Capacity						2						2				2					2	
						0						0				0					0	
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	Left	84	1	84	0	84	84	48	137	1	137	0	137	1	137	0	137	1	137			
	Left-Through		0							0				0				0				
	Through	631	1	368	3	634	369	62	732	1	449	3	735	1	451	0	735	1	451			
	Through-Right		1							1				1				1				
	Right	104	0	104	0	104	104	56	166	0	166	0	166	0	166	0	166	0	166			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
SOUTHBOUND	Left	89	1	89	0	89	89	1	95	1	95	0	95	1	95	0	95	1	95			
	Left-Through		0							0				0				0				
	Through	496	1	496	11	507	507	33	560	1	560	11	571	1	571	0	571	1	571			
	Through-Right		0							0				0				0				
	Right	149	1	94	0	149	94	10	168	1	109	0	168	1	109	0	168	1	109			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
EASTBOUND	Left	110	1	110	0	110	110	2	119	1	119	0	119	1	119	0	119	1	119			
	Left-Through		0							0				0				0				
	Through	778	1	423	4	782	425	304	1130	1	613	4	1134	1	615	0	1134	1	615			
	Through-Right		1							1				1				1				
	Right	68	0	68	0	68	68	24	96	0	96	0	96	0	96	0	96	0	96			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
WESTBOUND	Left	72	1	72	0	72	72	29	105	1	105	0	105	1	105	0	105	1	105			
	Left-Through		0							0				0				0				
	Through	741	1	404	8	749	408	332	1119	1	596	8	1127	1	600	0	1127	1	600			
	Through-Right		1							1				1				1				
	Right	66	0	66	0	66	66	3	73	0	73	0	73	0	73	0	73	0	73			
	Left-Through-Right		0							0				0				0				
Left-Right		0								0				0			0					
CRITICAL VOLUMES			North-South: 580			North-South: 591			North-South: 697			North-South: 708			North-South: 708							
			East-West: 514			East-West: 518			East-West: 718			East-West: 720			East-West: 720							
			SUM: 1094			SUM: 1109			SUM: 1415			SUM: 1428			SUM: 1428							
VOLUME/CAPACITY (V/C) RATIO:			0.729			0.739			0.943			0.952			0.952							
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.629			0.639			0.843			0.852			0.852							
LEVEL OF SERVICE (LOS):			B			B			D			D			D							

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.009	Δ v/c after mitigation:	0.009
Significant impacted?	NO	Fully mitigated?	N/A

PM - Supermarket.xls

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Vine St	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016										
13	East-West Street:	Selma Ave	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0											
			2		2		2		2											
			0		0		0		0											
			0		0		0		0											
			0		0		0		0											
			2		2		2		2											
			0		0		0		0											
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	52	1	52	0	52	52	0	55	1	55	0	55	1	55	0	55	1	55	
	Left-Through		0							0				0				0		
	Through	1138	2	569	0	1138	569	123	1331	2	666	0	1331	2	666	0	1331	2	666	
	Through-Right		0							0				0				0		
	Right	108	1	84	4	112	87	3	118	1	91	4	122	1	94	0	122	1	94	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
SOUTHBOUND	Left	67	1	67	19	86	86	0	71	1	71	19	90	1	90	0	90	1	90	
	Left-Through		0							0				0				0		
	Through	834	1	451	0	834	451	183	1068	1	575	0	1068	1	575	0	1068	1	575	
	Through-Right		1							1				1				1		
	Right	68	0	68	0	68	68	9	81	0	81	0	81	0	81	0	81	0	81	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
EASTBOUND	Left	79	1	79	0	79	79	3	87	1	87	0	87	1	87	0	87	1	87	
	Left-Through		0							0				0				0		
	Through	199	0	282	26	225	308	2	213	0	301	26	239	0	327	0	239	0	327	
	Through-Right		1							1				1				1		
	Right	83	0	0	0	83	0	0	88	0	0	0	88	0	0	0	88	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
WESTBOUND	Left	48	1	48	2	50	50	3	54	1	54	2	56	1	56	0	56	1	56	
	Left-Through		0							0				0				0		
	Through	97	0	167	13	110	180	1	104	0	178	13	117	0	191	0	117	0	191	
	Through-Right		1							1				1				1		
	Right	70	0	0	0	70	0	0	74	0	0	0	74	0	0	0	74	0	0	
	Left-Through-Right		0							0				0				0		
	Left-Right		0							0				0				0		
CRITICAL VOLUMES			North-South: 636 East-West: 330 SUM: 966	North-South: 655 East-West: 358 SUM: 1013	North-South: 737 East-West: 355 SUM: 1092	North-South: 756 East-West: 383 SUM: 1139	North-South: 756 East-West: 383 SUM: 1139	North-South: 756 East-West: 383 SUM: 1139	North-South: 756 East-West: 383 SUM: 1139											
VOLUME/CAPACITY (V/C) RATIO:			0.644	0.675	0.728	0.759	0.759	0.759	0.759											
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.544	0.575	0.628	0.659	0.659	0.659	0.659											
LEVEL OF SERVICE (LOS):			A	A	B	B	B	B	B											

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.031	Δv/c after mitigation:	0.031
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Argyle Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
14		East-West Street: Selma Ave			Projection Year: 2023			Peak Hour: PM			Reviewed by:				Project: J1522				
No. of Phases		2			2			2					2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0					0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?		0			0			0			NB-- 0 SB-- 0		0		0				
ATSAC-1 or ATSAC+ATCS-2?		0			0			0			NB-- 0 SB-- 0		0		0				
Override Capacity		2			2			2			EB-- 0 WB-- 0		2		2				
		0			0			0			EB-- 0 WB-- 0		0		0				
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	44	1	44	0	44	44	0	47	1	47	0	47	1	47	0	47	1	47
	Left-Through		0							0				0				0	
	Through	210	0	240	0	210	280	25	248	0	280	0	248	0	320	0	248	0	320
	Through-Right		1							1				1				1	
	Right	30	0	0	40	70	0	0	32	0	0	40	72	0	0	0	72	0	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	8	1	8	15	23	23	0	8	1	8	15	23	1	23	0	23	1	23
	Left-Through		0							0				0				0	
	Through	262	0	362	-2	260	360	7	285	0	395	-2	283	0	393	0	283	0	393
	Through-Right		1							1				1				1	
	Right	100	0	0	0	100	0	4	110	0	0	0	110	0	0	0	110	0	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	95	1	95	0	95	95	5	106	1	106	0	106	1	106	0	106	1	106
	Left-Through		0							0				0				0	
	Through	110	0	189	56	166	237	0	117	0	201	56	173	0	249	0	173	0	249
	Through-Right		1							1				1				1	
	Right	79	0	0	-8	71	0	0	84	0	0	-8	76	0	0	0	76	0	0
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
WESTBOUND	Left	11	0	11	13	24	24	0	12	0	12	13	25	0	25	0	25	0	25
	Left-Through		0							0				0				0	
	Through	62	0	165	14	76	208	0	66	0	176	14	80	0	219	0	80	0	219
	Through-Right		0							0				0				0	
	Right	92	0	0	16	108	0	0	98	0	0	16	114	0	0	0	114	0	0
	Left-Through-Right		1							1				1				1	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 406 East-West: 260 SUM: 666			North-South: 404 East-West: 303 SUM: 707			North-South: 442 East-West: 282 SUM: 724			North-South: 440 East-West: 325 SUM: 765			North-South: 440 East-West: 325 SUM: 765					
VOLUME/CAPACITY (V/C) RATIO:		0.444			0.471			0.483			0.510			0.510					
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.344			0.371			0.383			0.410			0.410					
LEVEL OF SERVICE (LOS):		A			A			A			A			A					

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.027	Δv/c after mitigation:	0.027
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Gower St			Year of Count:			2017			Ambient Growth: (%)			1			Conducted by:			GTC			Date:			12/1/2016		
15		East-West Street:			Selma Ave			Projection Year:			2023			Peak Hour:			PM			Reviewed by:						Project:			J1522		
No. of Phases					4			4			4			4			4			4			4								
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					2			2			2			2			2			2			2								
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0											
ATSAC-1 or ATSAC+ATCS-2?					0			0			0			0			0			0			0								
Override Capacity					2			2			2			2			2			2			2								
					0			0			0			0			0			0			0								
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION												
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume									
NORTHBOUND	Left	↔	47	1	47	0	47	47	0	50	1	50	0	50	1	50	0	50	1	50											
	Left-Through	↔		0							0				0				0												
	Through	→	653	1	333	0	653	333	168	861	1	438	0	861	1	438	0	861	1	438											
	Through-Right	→		1							1				1				1												
	Right	→	13	0	13	0	13	13	0	14	0	14	0	14	0	14	0	14	0	14											
	Left-Through-Right	↔		0							0				0				0												
SOUTHBOUND	Left-Through-Right	↔		0							0				0				0												
	Left-Right	↔		0							0				0				0												
	Left	↔	25	1	25	0	25	25	0	27	1	27	0	27	1	27	0	27	1	27											
	Left-Through	↔		0							0				0				0												
	Through	→	550	0	671	0	550	682	71	655	0	783	0	655	0	794	0	655	0	794											
	Through-Right	→		1							1				1				1												
EASTBOUND	Right	→	121	0	0	11	132	0	0	128	0	0	11	139	0	0	0	139	0	0											
	Left-Through-Right	↔		0							0				0				0												
	Left-Right	↔		0							0				0				0												
	Left	↔	47	0	47	3	50	50	0	50	0	50	3	53	0	53	0	53	0	53											
	Left-Through	↔		0							0				0				0												
	Through	→	4	0	117	0	4	122	0	4	0	124	0	4	0	129	0	4	0	129											
WESTBOUND	Through-Right	→		0							0				0				0												
	Right	→	66	0	0	2	68	0	0	70	0	0	2	72	0	0	0	72	0	0											
	Left-Through-Right	↔		1							1				1				1												
	Left-Right	↔		0							0				0				0												
	Left	↔	3	0	3	0	3	3	0	3	0	3	0	3	0	3	0	3	0	3											
	Left-Through	↔		0							0				0				0												
CRITICAL VOLUMES	East-West:			162	East-West:			167	East-West:			172	East-West:			177	East-West:			177											
	SUM:			880	SUM:			896	SUM:			1005	SUM:			1021	SUM:			1021											
	VOLUME/CAPACITY (V/C) RATIO:			0.640	VOLUME/CAPACITY (V/C) RATIO:			0.652	VOLUME/CAPACITY (V/C) RATIO:			0.731	VOLUME/CAPACITY (V/C) RATIO:			0.743	VOLUME/CAPACITY (V/C) RATIO:			0.743											
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.540	V/C LESS ATSAC/ATCS ADJUSTMENT:			0.552	V/C LESS ATSAC/ATCS ADJUSTMENT:			0.631	V/C LESS ATSAC/ATCS ADJUSTMENT:			0.643	V/C LESS ATSAC/ATCS ADJUSTMENT:			0.643												
LEVEL OF SERVICE (LOS):			A	LEVEL OF SERVICE (LOS):			A	LEVEL OF SERVICE (LOS):			B	LEVEL OF SERVICE (LOS):			B	LEVEL OF SERVICE (LOS):			B												

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.012	Δv/c after mitigation:	0.012
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Vine St			Year of Count:			2017			Ambient Growth: (%)			1			Conducted by:		GTC			Date:		12/1/2016		
16		East-West Street:			Sunset Blvd			Projection Year:			2023			Peak Hour:			PM			Reviewed by:					Project:		J1522		
No. of Phases								4						4						4						4			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?								0						0						0						0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			NB-- 3 SB-- 0			0			
ATSAC-1 or ATSAC+ATCS-2?					EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			EB-- 0 WB-- 0			0			
Override Capacity								2						2						2						2			
								0						0						0						0			
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION										
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume							
NORTHBOUND	Left	99	1	99	0	99	99	13	118	1	118	0	118	1	118	0	118	1	118										
	Left-Through		0							0				0				0											
	Through	949	2	475	4	953	477	79	1086	2	543	4	1090	2	545	0	1090	2	545										
	Through-Right		0							0				0				0											
	Right	162	1	16	0	162	16	74	246	1	23	0	246	1	23	0	246	1	23										
	Left-Through-Right		0							0				0				0											
Left-Right		0							0				0				0												
SOUTHBOUND	Left	154	1	154	0	154	154	83	246	1	246	0	246	1	246	0	246	1	246										
	Left-Through		0							0				0				0											
	Through	981	1	554	2	983	555	89	1130	1	639	2	1132	1	640	0	1132	1	640										
	Through-Right		1							1				1				1											
	Right	127	0	127	0	127	127	13	148	0	148	0	148	0	148	0	148	0	148										
	Left-Through-Right		0							0				0				0											
Left-Right		0							0				0				0												
EASTBOUND	Left	99	1	99	0	99	99	15	120	1	120	0	120	1	120	0	120	1	120										
	Left-Through		0							0				0				0											
	Through	1461	2	522	14	1475	527	275	1826	2	651	14	1840	2	655	0	1840	2	655										
	Through-Right		1							1				1				1											
	Right	106	0	106	0	106	106	13	126	0	126	0	126	0	126	0	126	0	126										
	Left-Through-Right		0							0				0				0											
Left-Right		0							0				0				0												
WESTBOUND	Left	146	1	146	0	146	146	68	223	1	223	0	223	1	223	0	223	1	223										
	Left-Through		0							0				0				0											
	Through	1098	2	401	7	1105	403	310	1476	2	540	7	1483	2	542	0	1483	2	542										
	Through-Right		1							1				1				1											
	Right	105	0	105	0	105	105	32	143	0	143	0	143	0	143	0	143	0	143										
	Left-Through-Right		0							0				0				0											
Left-Right		0							0				0				0												
CRITICAL VOLUMES					North-South: 653 East-West: 668 SUM: 1321			North-South: 654 East-West: 673 SUM: 1327			North-South: 789 East-West: 874 SUM: 1663				North-South: 791 East-West: 878 SUM: 1669				North-South: 791 East-West: 878 SUM: 1669										
VOLUME/CAPACITY (V/C) RATIO:					0.961			0.965			1.209				1.214				1.214										
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.861			0.865			1.109				1.114				1.114										
LEVEL OF SERVICE (LOS):					D			D			F				F				F										

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.005	Δv/c after mitigation:	0.005
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Argyle Ave	Year of Count:	2017	Ambient Growth: (%):	1	Conducted by:	GTC	Date:	12/1/2016											
17	East-West Street:	Sunset Blvd	Projection Year:	2023	Peak Hour:	PM	Reviewed by:		Project:	J1522											
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity			NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0		NB-- 0 SB-- 0 EB-- 0 WB-- 0												
			2		2		2		2												
			0		0		0		0												
			0		0		0		0												
			0		0		0		0												
			2		2		2		2												
			0		0		0		0												
MOVEMENT			EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT			FUTURE CONDITION W/ PROJECT			FUTURE W/ PROJECT W/ MITIGATION						
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SOUTHBOUND	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left	64	1	64	11	75	75	0	68	1	68	11	79	1	79	0	79	1	79	0	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EASTBOUND	Through-Right	150	1	76	7	157	76	7	166	1	75	7	173	1	75	0	173	1	75	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left	148	1	148	14	162	162	25	182	1	182	14	196	1	196	0	196	1	196	0	
WESTBOUND	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	1373	3	458	0	1373	458	381	1838	3	613	0	1838	3	613	0	1838	3	613	0	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CRITICAL VOLUMES	Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through	1115	2	404	0	1115	411	414	1598	2	567	0	1598	2	574	0	1598	2	574	0	
	Through	98	1	98	20	118	118	0	104	0	104	20	124	0	124	0	124	0	124	0	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CRITICAL VOLUMES			North-South: 76	East-West: 552	SUM: 628	North-South: 76	East-West: 573	SUM: 649	North-South: 75	East-West: 749	SUM: 824	North-South: 79	East-West: 770	SUM: 849	North-South: 79	East-West: 770	SUM: 849	North-South: 79	East-West: 770	SUM: 849	
VOLUME/CAPACITY (V/C) RATIO:			0.419	0.433	0.549	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	0.566	
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.319	0.333	0.449	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	0.466	
LEVEL OF SERVICE (LOS):			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.017	Δv/c after mitigation:	0.017
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			El Centro Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
18		East-West Street:			Sunset Blvd			Projection Year: 2023			Peak Hour: PM			Reviewed by:				Project: J1522				
No. of Phases					2			2			2			2		2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?					EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0				
Override Capacity					2			2			2			2		2		2				
					0			0			0			0		0		0				
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	57	0	57	0	57	57	0	61	0	61	0	61	0	61	0	61	0	61			
	Left-Through		0							0				0				0				
	Through	154	0	327	6	160	333	2	165	0	349	6	171	0	355	0	171	0	355			
	Through-Right		0							0				0				0				
	Right	116	0	0	0	116	0	0	123	0	0	0	123	0	0	0	123	0	0			
	Left-Through-Right		1							1				1				1				
Left-Right		0								0				0				0				
SOUTHBOUND	Left	43	0	43	6	49	49	3	49	0	49	6	55	0	55	0	55	0	55			
	Left-Through		0							0				0				0				
	Through	54	0	136	0	54	142	1	58	0	148	0	58	0	154	0	58	0	154			
	Through-Right		0							0				0				0				
	Right	39	0	0	0	39	0	0	41	0	0	0	41	0	0	0	41	0	0			
	Left-Through-Right		1							1				1				1				
Left-Right		0							0				0				0					
EASTBOUND	Left	45	1	45	0	45	45	0	48	1	48	0	48	1	48	0	48	1	48			
	Left-Through		0							0				0				0				
	Through	1529	2	532	11	1540	535	486	2109	2	726	11	2120	2	730	0	2120	2	730			
	Through-Right		1							1				1				1				
	Right	66	0	66	0	66	66	0	70	0	70	0	70	0	70	0	70	0	70			
	Left-Through-Right		0							0				0				0				
Left-Right		0							0				0				0					
WESTBOUND	Left	64	1	64	0	64	64	0	68	1	68	0	68	1	68	0	68	1	68			
	Left-Through		0							0				0				0				
	Through	1269	2	451	20	1289	459	533	1880	2	657	20	1900	2	666	0	1900	2	666			
	Through-Right		1							1				1				1				
	Right	83	0	83	6	89	89	4	92	0	92	6	98	0	98	0	98	0	98			
	Left-Through-Right		0							0				0				0				
Left-Right		0							0				0				0					
CRITICAL VOLUMES					North-South: 370			North-South: 382			North-South: 398			North-South: 410		North-South: 410						
					East-West: 596			East-West: 599			East-West: 794			East-West: 798		East-West: 798						
					SUM: 966			SUM: 981			SUM: 1192			SUM: 1208		SUM: 1208						
VOLUME/CAPACITY (V/C) RATIO:					0.644			0.654			0.795			0.805		0.805						
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.544			0.554			0.695			0.705		0.705						
LEVEL OF SERVICE (LOS):					A			A			B			C		C						

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.010	Δv/c after mitigation:	0.010
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Gower St			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016			
19		East-West Street: Sunset Blvd			Projection Year: 2023			Peak Hour: PM				Reviewed by:				Project: J1522			
No. of Phases		3			3			3				3		3		3			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0			0			0				0		0		0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0		
		EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0		
ATSAC-1 or ATSAC+ATCS-2?		2			2			2				2		2		2			
Override Capacity		0			0			0				0		0		0			
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	50	1	50	5	55	55	11	64	1	64	5	69	1	69	0	69	1	69
	Left-Through		0							0				0				0	
	Through	484	0	569	0	484	569	80	594	0	690	0	594	0	690	0	594	0	690
	Through-Right		1							1				1				1	
	Right	85	0	0	0	85	0	6	96	0	0	0	96	0	0	0	96	0	0
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	72	1	72	0	72	72	5	81	1	81	0	81	1	81	0	81	1	81
	Left-Through		0							0				0				0	
	Through	423	0	477	2	425	479	32	481	0	572	2	483	0	574	0	483	0	574
	Through-Right		1							1				1				1	
	Right	54	0	0	0	54	0	34	91	0	0	0	91	0	0	0	91	0	0
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	113	1	113	0	113	113	80	200	1	200	0	200	1	200	0	200	1	200
	Left-Through		0							0				0				0	
	Through	1452	2	510	17	1469	516	434	1975	2	693	17	1992	2	699	0	1992	2	699
	Through-Right		1							1				1				1	
	Right	79	0	79	0	79	79	21	105	0	105	0	105	0	105	0	105	0	105
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	72	1	72	0	72	72	3	79	1	79	0	79	1	79	0	79	1	79
	Left-Through		0							0				0				0	
	Through	1240	2	456	22	1262	463	450	1766	2	637	22	1788	2	644	0	1788	2	644
	Through-Right		1							1				1				1	
	Right	128	0	128	0	128	128	8	144	0	144	0	144	0	144	0	144	0	144
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
CRITICAL VOLUMES		North-South: 641 East-West: 582 SUM: 1223			North-South: 641 East-West: 588 SUM: 1229			North-South: 771 East-West: 837 SUM: 1608				North-South: 771 East-West: 844 SUM: 1615				North-South: 771 East-West: 844 SUM: 1615			
VOLUME/CAPACITY (V/C) RATIO:		0.858			0.862			1.128				1.133				1.133			
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.758			0.762			1.028				1.033				1.033			
LEVEL OF SERVICE (LOS):		C			C			F				F				F			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.005	Δv/c after mitigation:	0.005
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street: Bronson Ave			Year of Count: 2017			Ambient Growth: (%): 1				Conducted by:		GTC		Date: 12/1/2016	
20		East-West Street: Sunset Blvd			Projection Year: 2023			Peak Hour: PM				Reviewed by:				Project: J1522	
No. of Phases																	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?																	
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0
ATSAC-1 or ATSAC+ATCS-2?		EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0
Override Capacity																	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Van Ness Ave			Year of Count: 2017			Ambient Growth: (%): 1			Conducted by:		GTC		Date: 12/1/2016				
21		East-West Street:			Sunest Blvd			Projection Year: 2023			Peak Hour: PM			Reviewed by:				Project: J1522				
No. of Phases					2			2			2			2		2		2				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0			0			0			0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0		NB-- 0 SB-- 0		NB-- 0 SB-- 0				
ATSAC-1 or ATSAC+ATCS-2?					EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0			EB-- 0 WB-- 0		EB-- 0 WB-- 0		EB-- 0 WB-- 0				
Override Capacity					2			2			2			2		2		2				
					0			0			0			0		0		0				
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	83	1	83	0	83	83	23	111	1	111	0	111	1	111	0	111	1	111			
	Left-Through		0							0				0				0				
	Through	48	0	183	0	48	183	0	51	0	230	0	51	0	230	0	51	0	230			
	Through-Right		1							1				1				1				
	Right	135	0	0	0	135	0	36	179	0	0	0	179	0	0	0	179	0	0			
	Left-Through-Right		0							0				0				0				
	Left-Right		0							0				0				0				
SOUTHBOUND	Left	367	1	367	0	367	367	26	416	1	416	0	416	1	416	0	416	1	416			
	Left-Through		0							0				0				0				
	Through	266	0	287	0	266	287	15	297	0	319	0	297	0	319	0	297	0	319			
	Through-Right		1							1				1				1				
	Right	21	0	0	0	21	0	0	22	0	0	0	22	0	0	0	22	0	0			
	Left-Through-Right		0							0				0				0				
	Left-Right		0							0				0				0				
EASTBOUND	Left	9	1	9	0	9	9	0	10	1	10	0	10	1	10	0	10	1	10			
	Left-Through		0							0				0				0				
	Through	1875	2	634	17	1892	640	463	2453	2	832	17	2470	2	837	0	2470	2	837			
	Through-Right		1							1				1				1				
	Right	28	0	28	0	28	28	12	42	0	42	0	42	0	42	0	42	0	42			
	Left-Through-Right		0							0				0				0				
	Left-Right		0							0				0				0				
WESTBOUND	Left	71	1	71	0	71	71	7	82	1	82	0	82	1	82	0	82	1	82			
	Left-Through		0							0				0				0				
	Through	1274	2	429	22	1296	436	440	1792	2	602	22	1814	2	609	0	1814	2	609			
	Through-Right		1							1				1				1				
	Right	12	0	12	0	12	12	0	13	0	13	0	13	0	13	0	13	0	13			
	Left-Through-Right		0							0				0				0				
	Left-Right		0							0				0				0				
CRITICAL VOLUMES					North-South: 550			North-South: 550			North-South: 646			North-South: 646		North-South: 646						
					East-West: 705			East-West: 711			East-West: 914			East-West: 919		East-West: 919						
					SUM: 1255			SUM: 1261			SUM: 1560			SUM: 1565		SUM: 1565						
VOLUME/CAPACITY (V/C) RATIO:					0.837			0.841			1.040			1.043		1.043						
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.737			0.741			0.940			0.943		0.943						
LEVEL OF SERVICE (LOS):					C			C			E			E		E						

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:		North-South Street:			Wilton Pl			Year of Count:			2017			Ambient Growth: (%)			1			Conducted by:		GTC			Date:		12/1/2016		
22		East-West Street:			Sunset Blvd			Projection Year:			2023			Peak Hour:			PM			Reviewed by:					Project:		J1522		
No. of Phases					2			2			2			2			2			2			2						
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0			0			0			0			0			0			0						
Right Turns: FREE-1, NRTOR-2 or OLA-3?					NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0			NB-- 0 SB-- 0									
ATSAC-1 or ATSAC+ATCS-2?					0			0			0			0			0			0			0						
Override Capacity					2			2			2			2			2			2			2						
					0			0			0			0			0			0			0						
MOVEMENT					EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION										
					Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume							
NORTHBOUND	Left	→	103	1	103	0	103	103	3	112	1	112	0	112	1	112	0	112	1	112									
	Left-Through	→	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Through	→	391	1	291	0	391	291	2	417	1	310	0	417	1	310	0	417	1	310									
	Through-Right	→	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Left-Through-Right	→	190	0	190	0	190	190	0	202	0	202	0	202	0	202	0	202	0	202									
	Left-Right	→	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
SOUTHBOUND	Left	←	80	1	80	0	80	80	48	133	1	133	0	133	1	133	0	133	1	133									
	Left-Through	←	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Through	←	383	1	239	0	383	239	1	408	1	256	0	408	1	256	0	408	1	256									
	Through-Right	←	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Right	←	95	0	95	0	95	95	2	103	0	103	0	103	0	103	0	103	0	103									
	Left-Through-Right	←	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
EASTBOUND	Left	→	90	1	90	0	90	90	2	98	1	98	0	98	1	98	0	98	1	98									
	Left-Through	→	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Through	→	1500	2	554	3	1503	555	254	1846	2	675	3	1849	2	676	0	1849	2	676									
	Through-Right	→	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Right	→	163	0	163	0	163	163	7	180	0	180	0	180	0	180	0	180	0	180									
	Left-Through-Right	→	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
WESTBOUND	Left	←	82	1	82	0	82	82	1	88	1	88	0	88	1	88	0	88	1	88									
	Left-Through	←	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Through	←	1123	2	562	6	1129	565	237	1429	2	715	6	1435	2	718	0	1435	2	718									
	Through-Right	←	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Right	←	150	1	110	0	150	110	21	180	1	114	0	180	1	114	0	180	1	114									
	Left-Through-Right	←	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
CRITICAL VOLUMES					North-South: 371 East-West: 652 SUM: 1023			North-South: 371 East-West: 655 SUM: 1026			North-South: 443 East-West: 813 SUM: 1256				North-South: 443 East-West: 816 SUM: 1259				North-South: 443 East-West: 816 SUM: 1259										
VOLUME/CAPACITY (V/C) RATIO:					0.682			0.684			0.837				0.839				0.839										
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.582			0.584			0.737				0.739				0.739										
LEVEL OF SERVICE (LOS):					A			A			C				C				C										

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 13: Supermarket - ExP AM

Report File: S:\...\Supermarket - ExPAM.pdf

5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.278	22.6	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.630	24.2	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.076	8.2	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.563	28.2	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.104	78.0	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.061	28.5	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		13.1	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		13.0	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.275	33.3	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 1: Vine & US 101 SB Off-ramp / Franklin**

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1450
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	61	97	0	11	0	0	226	0	33	363
Total Analysis Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1450
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	0	45	0	45	0	0	65	0	20	25
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	22	22	57	30	82
g / C, Green / Cycle	0.28	0.28	0.25	0.25	0.63	0.34	0.91
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.11	0.03	0.25	0.07	0.92
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	500	446	879	392	2231	627	1443
d1, Uniform Delay [s]	24.79	27.40	28.59	26.20	8.31	21.29	2.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.05	4.67	0.35	0.13	0.12	0.16	24.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.54	0.44	0.11	0.40	0.21	1.01
d, Delay for Lane Group [s/veh]	25.84	32.06	28.94	26.32	8.43	21.45	27.84
Lane Group LOS	C	C	C	C	A	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.96	4.89	3.50	0.73	3.90	1.94	9.99
50th-Percentile Queue Length [ft]	49.12	122.13	87.57	18.37	97.60	48.52	249.73
95th-Percentile Queue Length [veh]	3.54	8.51	6.31	1.32	7.03	3.49	15.24
95th-Percentile Queue Length [ft]	88.42	212.75	157.63	33.06	175.68	87.34	380.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.84	0.00	32.06	28.94	0.00	26.32	0.00	0.00	8.43	0.00	21.45	27.84
Movement LOS	C		C	C		C			A		C	F
d_A, Approach Delay [s/veh]	30.08			28.67			8.43			27.31		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	22.57											
Intersection LOS	C											
Intersection V/C	0.278											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	228	21	36	72	117	66	187	429	104	138	857	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	228	21	36	72	117	66	187	429	104	138	857	663
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	5	9	18	29	17	47	107	26	35	214	166
Total Analysis Volume [veh/h]	228	21	36	72	117	66	187	429	104	138	857	663
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	20	0	36	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	8	8	8	62	49	49	9	52	52
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.09	0.69	0.54	0.54	0.10	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.02	0.04	0.06	0.04	0.36	0.12	0.07	0.08	0.42	0.45
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	520	3547	1583	1774	1863	1606
c, Capacity [veh/h]	167	169	149	156	164	139	350	1918	856	177	1076	928
d1, Uniform Delay [s]	39.77	39.77	37.85	39.10	40.03	39.15	16.71	10.82	10.18	39.62	13.96	14.75
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.35	6.27	0.83	2.12	5.71	2.50	5.74	0.27	0.29	7.24	4.44	6.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.74	0.24	0.46	0.72	0.47	0.53	0.22	0.12	0.78	0.73	0.79
d, Delay for Lane Group [s/veh]	46.12	46.04	38.68	41.23	45.74	41.65	22.46	11.09	10.47	46.86	18.40	21.48
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.94	2.95	0.76	1.59	2.75	1.47	1.60	2.16	1.02	3.30	11.81	11.99
50th-Percentile Queue Length [ft]	73.40	73.81	19.09	39.73	68.76	36.77	39.99	54.11	25.59	82.44	295.36	299.72
95th-Percentile Queue Length [veh]	5.29	5.31	1.37	2.86	4.95	2.65	2.88	3.90	1.84	5.94	17.45	17.67
95th-Percentile Queue Length [ft]	132.13	132.86	34.36	71.52	123.76	66.18	71.99	97.41	46.06	148.39	436.28	441.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.09	46.04	38.68	41.23	45.74	41.65	22.46	11.09	10.47	46.86	18.64	21.48
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	45.15			43.41			13.95			22.12		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	24.22											
Intersection LOS	C											
Intersection V/C	0.630											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	308	43	91	205	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	43	91	205	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	11	23	51	0	0
Total Analysis Volume [veh/h]	308	43	91	205	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.23	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.24	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	6.12	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.53		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.16					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	28.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.563

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	548	0	0	421	193	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	548	0	0	421	193	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	0	0	105	48	22
Total Analysis Volume [veh/h]	548	0	0	421	193	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.56	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	28.21	10.67
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	3.29	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	82.20	10.46
d_A, Approach Delay [s/veh]	0.00		0.00		22.68	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.11					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 78.0
 Level Of Service: F
 Volume to Capacity (v/c): 0.104

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	347	29	24	587	0	214	24	554	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	347	29	24	587	0	214	24	554	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	87	7	6	147	0	54	6	139	0	0	0
Total Analysis Volume [veh/h]	0	347	29	24	587	0	214	24	554	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	0.81	0.10	0.79	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.12	0.00	0.00	75.96	78.01	26.40	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	D			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.04	0.52	0.00	8.08	7.97	7.85	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	25.98	12.99	0.00	202.09	199.18	196.27	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.32			41.35			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	18.52											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	28.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	26	360	905	169	10	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	360	905	169	10	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	90	226	42	3	6
Total Analysis Volume [veh/h]	26	360	905	169	10	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.01	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	10.82	0.00	0.00	0.00	28.47	13.79
Movement LOS	B	A	A	A	D	B
95th-Percentile Queue Length [veh]	1.25	0.63	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	31.34	15.67	0.00	0.00	8.83	8.83
d_A, Approach Delay [s/veh]	0.73		0.00		18.38	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.58					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

13.1
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	34	0	882	41	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	0	882	41	0	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	221	10	0	6
Total Analysis Volume [veh/h]	34	0	882	41	0	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.12	3.92	3.82	0.07
95th-Percentile Queue Length [ft]	3.08	98.11	95.44	1.67
Approach Delay [s/veh]	7.35	13.51		6.49
Approach LOS	A	B		A
Intersection Delay [s/veh]	13.13			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 13.0
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	80	8	3	94	0	2	0	0	0	0
Total Analysis Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.22	1.17	3.67	
95th-Percentile Queue Length [ft]	30.46	29.33	91.83	
Approach Delay [s/veh]	10.76		15.20	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	13.02			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	173	0	5	70	0	60	22	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	0	5	70	0	60	22	259
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	0	1	18	0	15	6	65
Total Analysis Volume [veh/h]	173	0	5	70	0	60	22	259
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.89	0.59	2.31
95th-Percentile Queue Length [ft]	47.18	14.84	57.72
Approach Delay [s/veh]	12.44	13.33	
Approach LOS	B	B	
Intersection Delay [s/veh]	13.02		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	33.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.275

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1453	261	48	1958
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1453	261	48	1958
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	363	65	12	490
Total Analysis Volume [veh/h]	0	0	1453	261	48	1958
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.28	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	33.32	0.00
Movement LOS			A	A	D	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.07	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	26.70	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	D					

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 14: Supermarket - ExP PM

Report File: S:\...\Supermarket - ExPPM.pdf

5/19/2017

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.557	18.6	B
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.656	25.5	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.089	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.293	32.5	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Left	0.867	70.1	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.258	32.2	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		10.3	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.6	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.456	76.7	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 1: Vine & US 101 SB Off-ramp / Franklin**

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	0	90	133	0	15	0	0	149	0	73	218
Total Analysis Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	0	56	0	56	0	0	75	0	19	15
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	20	20	43	19	82
g / C, Green / Cycle	0.43	0.43	0.22	0.22	0.48	0.21	0.91
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.15	0.04	0.17	0.16	0.55
s, saturation flow rate [veh/h]	1774	1601	3547	1583	3547	1863	1583
c, Capacity [veh/h]	769	694	776	346	1695	400	1443
d1, Uniform Delay [s]	19.02	19.32	32.35	28.54	14.76	32.92	0.39
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.85	3.50	1.09	0.23	0.12	2.54	1.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.58	0.69	0.17	0.35	0.73	0.60
d, Delay for Lane Group [s/veh]	21.87	22.82	33.44	28.76	14.88	35.45	2.28
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	6.90	6.72	5.34	1.02	3.69	6.06	0.75
50th-Percentile Queue Length [ft]	172.48	168.03	133.59	25.62	92.16	151.61	18.84
95th-Percentile Queue Length [veh]	11.21	10.97	9.13	1.84	6.64	10.10	1.36
95th-Percentile Queue Length [ft]	280.17	274.32	228.37	46.12	165.88	252.58	33.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.97	0.00	22.82	33.44	0.00	28.76	0.00	0.00	14.88	0.00	35.45	2.28
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	22.33			32.98			14.88			10.58		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.62											
Intersection LOS	B											
Intersection V/C	0.557											

Sequence


Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	454	40	136	48	73	39	186	902	67	101	557	682
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	454	40	136	48	73	39	186	902	67	101	557	682
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	114	10	34	12	18	10	47	226	17	25	139	171
Total Analysis Volume [veh/h]	454	40	136	48	73	39	186	902	67	101	557	682
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	15	0	10	19	0	29	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	5	57	47	47	7	47	47
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.52	0.52	0.07	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.14	0.14	0.09	0.03	0.04	0.02	0.29	0.25	0.04	0.06	0.30	0.43
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	637	3547	1583	1774	1863	1583
c, Capacity [veh/h]	301	304	269	107	112	95	359	1835	819	133	976	829
d1, Uniform Delay [s]	36.04	36.04	33.96	40.89	41.41	40.79	16.72	14.07	10.95	40.88	14.58	17.95
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.40	5.34	1.47	2.93	6.21	2.79	5.26	0.94	0.20	8.60	2.42	9.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.82	0.51	0.45	0.65	0.41	0.52	0.49	0.08	0.76	0.57	0.82
d, Delay for Lane Group [s/veh]	41.44	41.38	35.43	43.82	47.62	43.58	21.98	15.01	11.15	49.48	17.00	26.98
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.56	5.60	2.77	1.10	1.76	0.90	1.81	5.78	0.69	2.49	7.81	12.87
50th-Percentile Queue Length [ft]	139.09	139.96	69.28	27.62	44.02	22.47	45.27	144.59	17.14	62.19	195.31	321.72
95th-Percentile Queue Length [veh]	9.43	9.48	4.99	1.99	3.17	1.62	3.26	9.73	1.23	4.48	12.40	18.75
95th-Percentile Queue Length [ft]	235.80	236.96	124.70	49.72	79.24	40.45	81.49	243.19	30.86	111.94	309.91	468.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.41	41.38	35.43	43.82	47.62	43.58	21.98	15.01	11.15	49.48	17.00	26.98
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	40.12			45.50			15.91			24.53		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	25.51											
Intersection LOS	C											
Intersection V/C	0.656											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	686	90	74	128	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	686	90	74	128	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	172	23	19	32	0	0
Total Analysis Volume [veh/h]	686	90	74	128	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.72	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.26	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.56		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	32.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.293

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1034	0	0	285	54	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1034	0	0	285	54	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	259	0	0	71	14	21
Total Analysis Volume [veh/h]	1034	0	0	285	54	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.29	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	32.47	13.58
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.16	0.59
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	29.05	14.86
d_A, Approach Delay [s/veh]	0.00		0.00		20.97	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	70.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	185	4	3	82	0	68	3	70	0	0	0
Total Analysis Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.00	0.00	0.87	0.06	0.33	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.28	0.00	0.00	70.09	66.12	11.43	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.73	0.37	0.00	8.82	5.16	1.51	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	18.35	9.18	0.00	220.52	129.10	37.67	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.30			40.93			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	13.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	32.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.258

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	82	758	553	45	44	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	758	553	45	44	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	190	138	11	11	12
Total Analysis Volume [veh/h]	82	758	553	45	44	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	0.26	0.07
d_M, Delay for Movement [s/veh]	9.03	0.00	0.00	0.00	32.23	16.26
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	2.20	1.10	0.00	0.00	1.37	1.37
95th-Percentile Queue Length [ft]	55.03	27.52	0.00	0.00	34.24	34.24
d_A, Approach Delay [s/veh]	0.88		0.00		23.99	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

10.3
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	111	0	671	3	0	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	0	671	3	0	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	168	1	0	6
Total Analysis Volume [veh/h]	111	0	671	3	0	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.44	2.22	2.22	0.08
95th-Percentile Queue Length [ft]	11.05	55.61	55.49	1.91
Approach Delay [s/veh]	7.80	10.88		6.68
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.33			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.6
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	12	7	1	8	0	4	0	0	0	0
Total Analysis Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.16	0.18	
95th-Percentile Queue Length [ft]	4.69	4.12	4.55	
Approach Delay [s/veh]	7.63		7.47	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.64			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	78	0	2	32	0	14	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	2	32	0	14	9	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	1	8	0	4	2	12
Total Analysis Volume [veh/h]	78	0	2	32	0	14	9	49
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.45	0.10	0.18
95th-Percentile Queue Length [ft]	11.24	2.59	4.57
Approach Delay [s/veh]	7.84	7.48	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.64		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 76.7
 Level Of Service: F
 Volume to Capacity (v/c): 0.456

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1953	349	40	1541
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1953	349	40	1541
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	488	87	10	385
Total Analysis Volume [veh/h]	0	0	1953	349	40	1541
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.46	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	76.74	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.91	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	47.70	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.94	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	F					

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 15: Supermarket - FP 2023 AM

Report File: S:\...\Supermarket - FP2023AM.pdf

5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.535	45.3	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	0.744	40.8	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.096	8.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.825	54.5	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.133	166.4	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.090	36.9	E
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		14.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		14.3	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.595	78.7	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	45.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1624
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1624
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	0	73	119	0	15	0	0	247	0	35	406
Total Analysis Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1624
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.17	0.17	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.07	0.19	0.13	0.04	0.28	0.07	1.03
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	847	586	261	1335	311	1443
d1, Uniform Delay [s]	10.52	11.96	36.21	32.63	24.26	33.73	3.28
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	1.12	2.73	0.45	0.83	0.99	66.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.35	0.81	0.23	0.74	0.44	1.13
d, Delay for Lane Group [s/veh]	10.83	13.08	38.94	33.08	25.09	34.73	69.41
Lane Group LOS	B	B	D	C	C	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.32	3.41	5.14	1.17	8.86	2.76	26.50
50th-Percentile Queue Length [ft]	33.00	85.37	128.60	29.36	221.38	68.95	662.58
95th-Percentile Queue Length [veh]	2.38	6.15	8.86	2.11	13.74	4.96	38.81
95th-Percentile Queue Length [ft]	59.39	153.67	221.59	52.84	343.39	124.10	970.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.83	0.00	13.08	38.94	0.00	33.08	0.00	0.00	25.09	0.00	34.73	69.41
Movement LOS	B		B	D		C			C		C	F
d_A, Approach Delay [s/veh]	12.38			38.28			25.09			66.70		
Approach LOS	B			D			C			E		
d_I, Intersection Delay [s/veh]	45.30											
Intersection LOS	D											
Intersection V/C	0.535											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	40.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.744

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	308	23	38	76	125	70	265	481	116	146	947	733
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	23	38	76	125	70	265	481	116	146	947	733
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	6	10	19	31	18	66	120	29	37	237	183
Total Analysis Volume [veh/h]	308	23	38	76	125	70	265	481	116	146	947	733
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	21	0	35	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	8	8	8	59	46	46	9	45	45
g / C, Green / Cycle	0.12	0.12	0.12	0.09	0.09	0.09	0.66	0.51	0.51	0.10	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.02	0.04	0.07	0.04	0.44	0.14	0.07	0.08	0.46	0.51
s, saturation flow rate [veh/h]	1774	1786	1583	1774	1863	1583	604	3547	1583	1774	1863	1610
c, Capacity [veh/h]	209	211	187	163	171	145	370	1802	804	186	926	800
d1, Uniform Delay [s]	38.67	38.67	35.94	38.86	39.87	38.92	25.81	12.63	11.78	39.37	21.09	22.68
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.47	6.42	0.53	2.08	5.91	2.47	11.31	0.36	0.38	7.12	16.03	40.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.79	0.20	0.47	0.73	0.48	0.72	0.27	0.14	0.79	0.92	1.03
d, Delay for Lane Group [s/veh]	45.14	45.09	36.47	40.94	45.79	41.38	37.13	12.99	12.15	46.49	37.12	62.70
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.87	3.89	0.78	1.67	2.94	1.55	2.93	2.71	1.26	3.48	19.48	24.35
50th-Percentile Queue Length [ft]	96.72	97.26	19.38	41.75	73.52	38.83	73.26	67.63	31.51	86.88	486.89	608.80
95th-Percentile Queue Length [veh]	6.96	7.00	1.40	3.01	5.29	2.80	5.27	4.87	2.27	6.26	26.71	33.23
95th-Percentile Queue Length [ft]	174.10	175.06	34.88	75.16	132.33	69.90	131.87	121.73	56.71	156.38	667.83	830.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.11	45.09	36.47	40.94	45.79	41.38	37.13	12.99	12.15	46.49	39.60	62.70
Movement LOS	D	D	D	D	D	D	D	B	B	D	D	E
d_A, Approach Delay [s/veh]	44.22			43.29			20.30			49.43		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	40.80											
Intersection LOS	D											
Intersection V/C	0.744											

Sequence



Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.096

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	394	96	103	220	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	394	96	103	220	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	24	26	55	0	0
Total Analysis Volume [veh/h]	394	96	103	220	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.72	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.32	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.97	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.78		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	54.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	612	0	0	454	251	105
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	612	0	0	454	251	105
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	0	0	114	63	26
Total Analysis Volume [veh/h]	612	0	0	454	251	105
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.82	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	54.46	11.15
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.92	0.53
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	173.03	13.37
d_A, Approach Delay [s/veh]	0.00		0.00		41.68	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	10.44					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	166.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	399	31	25	676	0	227	25	641	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	399	31	25	676	0	227	25	641	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	100	8	6	169	0	57	6	160	0	0	0
Total Analysis Volume [veh/h]	0	399	31	25	676	0	227	25	641	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	1.04	0.13	0.97	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.27	0.00	0.00	163.81	166.39	54.04	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.34	0.67	0.00	12.37	13.43	14.49	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	33.44	16.72	0.00	309.35	335.77	362.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.29			85.09			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	37.64											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	36.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	31	413	1003	244	11	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	413	1003	244	11	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	103	251	61	3	7
Total Analysis Volume [veh/h]	31	413	1003	244	11	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.00	0.09	0.06
d_M, Delay for Movement [s/veh]	11.88	0.00	0.00	0.00	36.89	15.98
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh]	1.92	0.96	0.00	0.00	0.53	0.53
95th-Percentile Queue Length [ft]	47.94	23.97	0.00	0.00	13.23	13.23
d_A, Approach Delay [s/veh]	0.83		0.00		22.04	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	E					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

14.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	37	0	958	44	0	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	0	958	44	0	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	240	11	0	6
Total Analysis Volume [veh/h]	37	0	958	44	0	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.13	4.71	4.58	0.07
95th-Percentile Queue Length [ft]	3.36	117.81	114.40	1.75
Approach Delay [s/veh]	7.37	14.91		6.50
Approach LOS	A	B		A
Intersection Delay [s/veh]	14.46			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 14.3
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	86	9	3	101	0	2	0	0	0	0
Total Analysis Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.40	1.34	4.55	
95th-Percentile Queue Length [ft]	34.89	33.59	113.64	
Approach Delay [s/veh]	11.30		17.38	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	14.32			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	184	0	5	74	0	64	23	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	0	5	74	0	64	23	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	0	1	19	0	16	6	70
Total Analysis Volume [veh/h]	184	0	5	74	0	64	23	281
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.16	0.66	2.84
95th-Percentile Queue Length [ft]	54.12	16.57	70.95
Approach Delay [s/veh]	13.30	14.77	
Approach LOS	B	B	
Intersection Delay [s/veh]	14.32		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	78.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1656	472	64	2502
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1656	472	64	2502
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	414	118	16	626
Total Analysis Volume [veh/h]	0	0	1656	472	64	2502
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.59	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	78.67	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.88	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	72.01	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.96	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.07					
Intersection LOS	F					

J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 16: Supermarket - FP 2023 PM

Report File: S:\...\Supermarket - FP2023PM.pdf

5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.491	20.5	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	0.786	42.6	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.128	10.7	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.874	102.0	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.091	207.8	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.406	52.1	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		11.0	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.8	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.572	509.7	F




V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	0	109	169	0	20	0	0	170	0	77	260
Total Analysis Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35	22	22	47	20	82
g / C, Green / Cycle	0.39	0.39	0.25	0.25	0.52	0.22	0.91
(v / s)_i Volume / Saturation Flow Rate	0.27	0.30	0.19	0.05	0.19	0.17	0.66
s, saturation flow rate [veh/h]	1774	1597	3547	1583	3547	1863	1583
c, Capacity [veh/h]	696	627	885	395	1840	419	1443
d1, Uniform Delay [s]	22.79	23.68	31.32	26.74	12.91	32.45	0.52
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.51	8.38	1.39	0.25	0.12	2.56	3.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

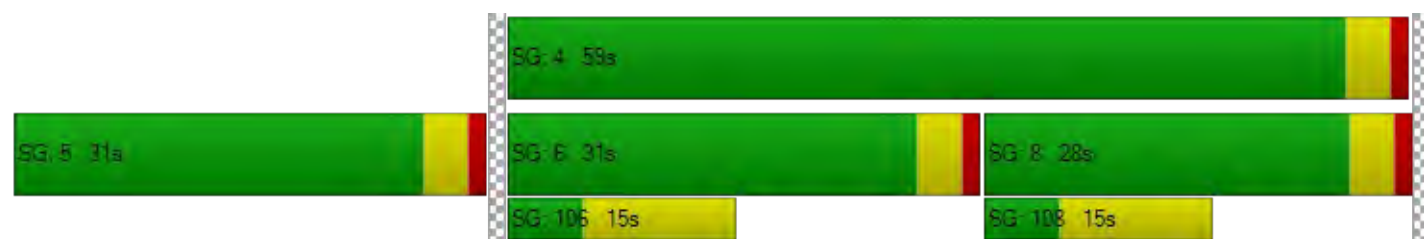
X, volume / capacity	0.69	0.76	0.76	0.21	0.37	0.74	0.72
d, Delay for Lane Group [s/veh]	28.30	32.06	32.71	26.99	13.03	35.01	3.67
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.15	9.79	6.78	1.38	3.89	6.41	1.26
50th-Percentile Queue Length [ft]	228.77	244.77	169.59	34.62	97.31	160.31	31.60
95th-Percentile Queue Length [veh]	14.11	14.92	11.05	2.49	7.01	10.57	2.27
95th-Percentile Queue Length [ft]	352.79	373.06	276.37	62.31	175.16	264.14	56.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.59	0.00	32.06	32.71	0.00	26.99	0.00	0.00	13.03	0.00	35.01	3.67
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	30.17			32.09			13.03			10.84		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.46											
Intersection LOS	C											
Intersection V/C	0.491											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	42.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	550	44	144	51	79	42	306	997	85	107	646	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	550	44	144	51	79	42	306	997	85	107	646	776
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	11	36	13	20	11	77	249	21	27	162	194
Total Analysis Volume [veh/h]	550	44	144	51	79	42	306	997	85	107	646	776
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	47	0	9	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	46	46	7	43	43
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.51	0.51	0.08	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.17	0.17	0.09	0.03	0.04	0.03	0.45	0.28	0.05	0.06	0.35	0.49
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	674	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	111	116	99	369	1826	815	139	893	759
d1, Uniform Delay [s]	37.51	37.51	34.38	40.74	41.32	40.64	27.31	14.74	11.20	40.70	18.67	23.43
k, delay calibration	0.41	0.41	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	47.75	47.05	1.75	2.96	6.76	2.87	19.11	1.18	0.26	8.68	5.06	38.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	1.00	0.55	0.46	0.68	0.42	0.83	0.55	0.10	0.77	0.72	1.02
d, Delay for Lane Group [s/veh]	85.26	84.56	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Lane Group LOS	F	F	D	D	D	D	D	B	B	D	C	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	10.29	10.31	2.97	1.17	1.91	0.97	4.24	6.71	0.89	2.63	11.29	22.90
50th-Percentile Queue Length [ft]	257.34	257.69	74.30	29.26	47.86	24.15	106.01	167.70	22.21	65.77	282.35	572.50
95th-Percentile Queue Length [veh]	15.57	15.57	5.35	2.11	3.45	1.74	7.62	10.96	1.60	4.74	16.81	31.28
95th-Percentile Queue Length [ft]	389.20	389.32	133.75	52.68	86.15	43.47	190.44	273.89	39.98	118.39	420.14	781.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	84.94	84.56	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Movement LOS	F	F	D	D	D	D	D	B	B	D	C	F
d_A, Approach Delay [s/veh]	75.39			45.66			22.37			44.87		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	42.63											
Intersection LOS	D											
Intersection V/C	0.786											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-




Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	798	152	92	139	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	798	152	92	139	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	200	38	23	35	0	0
Total Analysis Volume [veh/h]	798	152	92	139	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.13	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.74	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.44	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	10.95	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.28		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	102.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1158	0	0	310	131	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1158	0	0	310	131	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	290	0	0	78	33	26
Total Analysis Volume [veh/h]	1158	0	0	310	131	102
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.87	0.22
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	101.96	15.09
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	5.93	0.84
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	148.22	21.07
d_A, Approach Delay [s/veh]	0.00		0.00		63.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	8.76					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	207.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.091

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	212	4	3	107	0	72	4	89	0	0	0
Total Analysis Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.00	0.00	1.20	0.09	0.45	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.71	0.00	0.00	199.46	207.84	13.16	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.16	0.58	0.00	15.68	9.00	2.33	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	29.01	14.51	0.00	391.94	225.04	58.13	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.27			99.11			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	33.30											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	52.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.406

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	92	865	626	147	47	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	865	626	147	47	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	216	157	37	12	13
Total Analysis Volume [veh/h]	92	865	626	147	47	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.01	0.00	0.41	0.09
d_M, Delay for Movement [s/veh]	9.82	0.00	0.00	0.00	52.14	26.94
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh]	3.69	1.84	0.00	0.00	2.45	2.45
95th-Percentile Queue Length [ft]	92.23	46.12	0.00	0.00	61.14	61.14
d_A, Approach Delay [s/veh]	0.94		0.00		38.79	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.61					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

11.0
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	118	0	741	3	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	0	741	3	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	0	185	1	0	7
Total Analysis Volume [veh/h]	118	0	741	3	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.47	2.65	2.64	0.09
95th-Percentile Queue Length [ft]	11.87	66.25	66.11	2.16
Approach Delay [s/veh]	7.85	11.61		6.70
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.96			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.8
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	20	8	1	9	0	4	0	0	0	0
Total Analysis Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.24	0.20	
95th-Percentile Queue Length [ft]	6.58	5.95	4.92	
Approach Delay [s/veh]	7.81		7.55	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.79			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	83	0	2	34	0	15	10	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	2	34	0	15	10	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	1	9	0	4	3	20
Total Analysis Volume [veh/h]	83	0	2	34	0	15	10	78
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.49	0.12	0.31
95th-Percentile Queue Length [ft]	12.32	2.88	7.73
Approach Delay [s/veh]	8.00	7.65	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.79		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	509.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.572

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2290	676	62	2080
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2290	676	62	2080
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	573	169	16	520
Total Analysis Volume [veh/h]	0	0	2290	676	62	2080
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.57	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	509.65	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.43	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	160.83	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.75	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	6.19					
Intersection LOS	F					

Appendix G
Caltrans Analysis

Appendix G

Caltrans Analysis

This Appendix presents an analysis of Caltrans facilities, including freeway mainline segments, Caltrans intersections, and off-ramp queuing to provide further information to the decision makers for both the Project and Supermarket Option.

VMT

As noted in Chapter 1 of the Transportation Impact Study, under SB 743, the focus of transportation analysis will shift from driver delay to reduction of GHG, creation of multimodal networks and promotion of mixed-use developments. To better align with the State's multimodal transportation and environmental action goals, Caltrans is pursuing VMT as a metric of Project impacts, as outlined in the Caltrans Interim Guide. The Caltrans Interim Guide will remain in effect until superseded by new Caltrans transportation impact study guidelines, which are currently under development.

The Project characteristics (e.g., its location, proximity to transit, access to other nearby destinations, pedestrian connections, bicycle amenities, etc.) would encourage non-auto modes of transportation such as walking, bicycling, carpool, vanpool, transit, etc. and, therefore, would reduce VMT to the Project Site and associated transportation-related GHG emissions. The Project Site is located adjacent to and within walking distance of numerous transit line bus stops. The location efficiency of the Project Site would result in synergistic benefits that would reduce vehicle trips and VMT. Further, the Project would be located within an area that offers access to other nearby retail and entertainment destinations. Access to the Project Site would be provided from pedestrian pathways, as well as adequate bicycle parking. The combined effects of these factors would reduce the Project's anticipated vehicle trips and VMT and encourage walking and non-auto forms of transportation and transit ridership, which results in corresponding reductions in transportation-related emissions.

ANALYZED FACILITIES

As shown in Table G-1, the analyses conducted on Caltrans facilities included freeway mainline segments, signalized and unsignalized ramp intersections and freeway off-ramp queuing. Five freeway mainline segments on US 101 were analyzed using HCM methodology to determine density, speed, and LOS. Two signalized and six unsignalized intersections located at freeway ramps and under partial Caltrans jurisdiction were analyzed using HCM methodology to identify average vehicle delay and LOS. Five freeway off-ramps were analyzed for ramp queue lengths using the Vistro software to estimate queues.

LOS worksheets for each type of analysis are provided in the Attachment.

IMPACT THRESHOLDS

Guide for the Preparation of Traffic Impact Studies (Caltrans, December 2002) (Caltrans TIS Guide) states that Caltrans' target LOS is "at the transition between LOS C and LOS D," which is generally interpreted to mean in the lower half of the range of LOS D (where the LOS is determined based on the freeway mainline density or the intersection delay). When that threshold has already been exceeded, the existing condition (or projected future condition) should be maintained with the addition of Project traffic.

However, Caltrans does not identify specific incremental criteria by which to measure the significance of impacts to freeway mainline segments or intersections with ramp termini and, therefore, it is not possible to identify whether a specific facility would be significantly impacted under Caltrans criteria. In the absence of specific Caltrans criteria for evaluating impacts, these analysis results are presented for informational purposes.

Moreover, improvements to Caltrans freeway facilities tend to be beyond the feasibility of any individual project to implement; therefore, Appendix B of the Caltrans TIS Guide provides a methodology to identify a project's proportionate share of the future traffic growth on the Caltrans freeways facilities. The proportionate share, although not technically or legally tied to either a project impact or mitigation measure per se, is calculated by Caltrans as the percentage of the total projected traffic growth on a freeway mainline segment up to Year 2035.

FREEWAY MAINLINE SEGMENTS

Five freeway mainline segments on US 101 were analyzed using the HCM methodology. Per Caltrans' guidelines, a free-flow speed of 55 mph was assumed in the analysis. The LOS definitions for freeway mainline segments are presented in Table G-2.

Year 2017 Conditions

Existing freeway volumes were based on traffic volume data for an average weekday in January 2017 from Caltrans' Performance Measurement System (PeMS) database. Where PeMS data was unavailable, recently published traffic count data from *2015 Traffic Volumes on California State Highways* (Caltrans, 2016), which consists of the annual average daily traffic (AADT) volumes, as well as the two-way peak hour percentage of AADT factor ("K factor") and the percent of traffic in the peak direction factor ("D factor") used to develop peak hour volumes, were utilized. The freeway mainline segment volumes are summarized in Table G-3. Table G-4 summarizes the results of the HCM analysis for Existing Conditions, Existing with Project Conditions, and Existing with Project Conditions – Supermarket Option.

Table G-4 summarizes the Existing, Existing with Project, and Existing with Project – Supermarket Option operating conditions based on the speed, density, and LOS for each of the freeway mainline segments. As shown in Table G-4, the change in speed on the freeway mainline lanes would be very minor (i.e., one mph decrease) with the addition of either Project or Supermarket Option traffic. Neither the Project nor the Supermarket Option are anticipated to result in a change in LOS at any of the five segments.

Year 2023 Conditions

Traffic volumes were projected for Year 2023 to reflect the Project buildout year and are summarized in Table G-3. The existing traffic volumes were increased by both ambient growth (assumed to be 1% per year) and Related Project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2023 in Chapter 3. Table G-5 summarizes the results of the HCM analysis for Future without Project Conditions, Future with Project

Conditions, and Future with Project Conditions – Supermarket Option. Three of the five freeway mainline segments would experience nominal increases in density (one vehicle per mile per lane [vpmpl]) with either the Project or Supermarket Option. Neither the Project nor the Supermarket Option are anticipated to result in a change in LOS or speed at any of the five segments.

Year 2035 Conditions

Traffic volumes were projected for Year 2035 to reflect an 18-year horizon and are summarized in Table G-3. The existing traffic volumes were increased by both ambient growth (assumed to be 1% percent per year) and Related Project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2023 in Chapter 3. Table G-6 summarizes the results of the HCM analysis for Future without Project Conditions, Future with Project Conditions, and Future with Project Conditions – Supermarket Conditions in Year 2035. Two of the five freeway mainline segments would experience nominal increases in density (two vpmpl) and/or decrease in speed (one mph) with either the Project or Supermarket Option. The Project and Supermarket Option are not anticipated to result in a change in LOS at any of the five segments.

As shown in Table G-3, both the Project and Supermarket Option would add a maximum of approximately 20 to 30 vehicles per hour in one direction of travel. While both the Project and Supermarket Option would contribute to future cumulative traffic growth on the freeway system, the traffic represents an average increase in traffic of only 0.35% to 0.38%, as shown in Table G-7. Project traffic growth at its highest segment would represent the addition of one car every 10 minutes per lane of freeway, a very small incremental increase.

INTERSECTIONS

As described in Chapter 2, a total of 22 intersections located in the City were analyzed according to the significance thresholds established by the City (the Lead Agency). As shown in Table G-1, this Caltrans analysis focuses on two signalized and six unsignalized freeway ramp locations associated with US 101.

Overview

Caltrans does not have specific criteria to determine significance of incremental changes in intersection operations. Therefore, the significance of the transportation-related impacts on Caltrans facilities is based on the Lead Agency's significance thresholds and analyses, which are presented in Chapters 1 through 9 of the Transportation Impact Study.

The intersections under Caltrans jurisdiction were further analyzed using HCM methodology according to Caltrans TIS Guidelines and implemented using the Vistro software. Table G-8 summarizes the LOS definitions.

Year 2017 Conditions

The analysis of Year 2017 conditions was conducted using available traffic count data from Year 2017, provided in Appendix C. Table G-9 summarizes the results of both the signalized and unsignalized HCM analysis for Existing Conditions, Existing with Project Conditions, and Existing with Project Conditions – Supermarket Option for Year 2017. The LOS is not anticipated to result in a change at any of the eight intersections under either Project option.

Year 2023 Conditions

The Year 2023 traffic volumes were developed by increasing the existing traffic volumes with both ambient growth (assumed to be 1% per year) and Related Project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2023 in Chapter 3. Table G-10 summarizes the results of the signalized HCM analysis for Future without Project Conditions, Future with Project Conditions, and Future with Project Conditions – Supermarket Option for Year 2023. The Project and Supermarket Option are anticipated to result in minor increases in delay; however, the LOS would remain unchanged at all eight intersections.

Year 2035 Conditions

The Year 2035 traffic volumes were developed by increasing the existing traffic volumes with both ambient growth (assumed to be 1% per year) and Related Project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2023 in Chapter 3. Table G-11 summarizes the results of the signalized HCM analysis for Future without Project Conditions, Future with Project Conditions and Future with Project Conditions – Supermarket Option for Year 2035.

The Project and Supermarket Option are anticipated to result in minor increases in delay; however, the LOS would remain unchanged at all eight intersections.

OFF-RAMP QUEUES

Five freeway off-ramps from US 101 were analyzed to determine whether the length of the ramps were sufficient to accommodate vehicle queue lengths. The queue lengths were estimated using Vistro, which reports the 95th percentile queue length for each approach lane on the off-ramp.

The assessment of the off-ramps includes a review of the vehicle queue length as compared to the total available queuing capacity of the ramp to determine whether the vehicle queue would extend beyond the length of the ramp onto the mainline. To this end, the queuing analysis looks at two separate components of ramp capacity: the length of each approach lane to the intersection and the remaining length of the ramp, behind any approach lane delineation lines, to the gore point where the ramp diverges from the freeway mainline. The queue may exceed the striped length of a given approach lane, but as long as there is sufficient additional queuing capacity on the ramp, it will not spill over onto the mainline.

Year 2017 Conditions

The analysis of Year 2017 conditions was conducted using available traffic count data from Year 2017. Table G-12 summarizes the results of the queuing analysis for Existing Conditions,

Existing with Project Conditions, and Existing with Project Conditions – Supermarket Option for Year 2017. Queuing would not substantially worsen at any location under either Project option.

Year 2023 Conditions

The Year 2023 traffic volumes were developed by increasing the existing traffic volumes by both ambient growth (assumed to be 1% per year) and Related Project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2023 in Chapter 3. Table G-13 summarizes the results of the queuing analysis for Future without Project Conditions, Future with Project Conditions, and Future with Project Conditions – Supermarket Option for Year 2023. Queuing would not substantially worsen at any location under either Project option.

Year 2035 Conditions

The Year 2035 traffic volumes were developed by increasing the existing traffic volumes by both ambient growth (assumed to be 1% per year) and Related Project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2023 in Chapter 3. Table G-14 summarizes the results of the queuing analysis for Future without Project Conditions, Future with Project Conditions, and Future with Project Conditions – Supermarket Option for Year 2035. Queuing would not substantially worsen at any location under either Project option.

Off-Ramp Results

The queue during the morning peak hour at US 101 Southbound Off-Ramp at Vine Street and US 101 Southbound Off-Ramp at Gower Street extend beyond the available capacity under Future Year 2035 Conditions, with and without the addition of Project traffic for either Project option. The addition of Project traffic does not substantially increase the off-ramp queue at either location (approximately one vehicle length at either location). The queues at the remaining two off-ramps would not extend onto the freeway mainline under any of the analyzed conditions.

**TABLE G-1
ANALYZED CALTRANS FACILITIES**

ID	Location
<i>Signalized Freeway Ramp Intersections</i>	
S-1.	Vine Street & Franklin Avenue / US 101 Southbound Off-Ramp (Intersection #1)
S-2.	Argyle Avenue & Franklin Avenue / US 101 Northbound On-Ramp (Intersection #2)
<i>Unsignalized Freeway Ramp Intersections</i>	
U-1.	Argyle Avenue & US 101 Southbound On-Ramp (Intersection #23)
U-2.	Gower Street & US 101 Northbound Off-Ramp (Intersection #24)
U-3.	Gower Street & US 101 Southbound Off-Ramp / Yucca Street (Intersection #25)
U-4.	US 101 Southbound Off-Ramp / Van Ness Avenue & Harold Way (Intersection #27)
U-5.	Wilton Place & Harold Way / US 101 Northbound Off-Ramp (Intersection #28)
U-6.	US 101 Southbound On-Ramp & Sunset Boulevard (Intersection #29)
<i>Off-ramp Queues</i>	
Q-1.	Vine Street & Franklin Avenue / US 101 Southbound Off-Ramp (Intersection #1)
Q-2.	Gower Street & US 101 Northbound Off-Ramp (Intersection #24)
Q-3.	Gower Street & US 101 Southbound Off-Ramp / Yucca Street (Intersection #25)
Q-4.	US 101 Southbound Off-Ramp / Van Ness Avenue & Harold Way (Intersection #27)
Q-5.	Wilton Place & Harold Way / US 101 Northbound Off-Ramp (Intersection #28)

TABLE G-2
FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS - DENSITY

Level of Service	Description	Density [a]
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 11
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 and ≤ 18
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 and ≤ 26
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 and ≤ 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 and ≤ 45
F	Represents a breakdown in flow and oversaturated conditions.	> 45

Notes

Source: *2010 Highway Capacity Manual* (Transportation Research Board, 2010) and Caltrans.

[a] Density is defined in vehicles per mile per lane and describes the proximity to other vehicles and is related to the freedom to maneuver within the traffic stream (*2010 Highway Capacity Manual*, Transportation Research Board, 2010).

**TABLE G-3
FREEWAY MAINLINE SEGMENT TRAFFIC VOLUMES**

Freeway Mainline Segment	Peak Hour	Direction	Vehicles per Hour (VPH)					
			Existing Conditions [a]	Existing with Project Conditions	Future without Project Conditions (Year 2023)	Future with Project Conditions (Year 2023)	Future without Project Conditions (Year 2035)	Future with Project Conditions (Year 2035)
US 101 between Highland Avenue & Cahuenga Boulevard	AM Peak Hour	NB	8,036	8,055	8,990	9,009	10,588	10,607
		SB	8,018	8,024	8,982	8,988	10,688	10,694
	PM Peak Hour	NB	6,813	6,821	7,812	7,820	9,476	9,484
		SB	6,835	6,854	7,924	7,943	9,590	9,609
US 101 between Cahuenga Boulevard & Gower Street/Argyle Avenue	AM Peak Hour	NB	5,666	5,685	6,474	6,493	7,754	7,773
		SB	5,677	5,683	6,391	6,397	7,676	7,682
	PM Peak Hour	NB	4,702	4,710	5,480	5,488	6,974	6,982
		SB	4,722	4,741	5,554	5,573	6,810	6,829
US 101 between Gower Street/Argyle Avenue & Hollywood Boulevard	AM Peak Hour	NB	5,987	5,988	6,668	6,669	7,820	7,821
		SB	5,984	5,984	6,655	6,655	7,841	7,841
	PM Peak Hour	NB	4,552	4,557	5,268	5,273	6,403	6,408
		SB	4,605	4,605	5,311	5,311	6,400	6,400
US 101 between Hollywood Boulevard & Sunset Boulevard	AM Peak Hour	NB	5,861	5,862	6,509	6,510	7,620	7,621
		SB	5,871	5,871	6,491	6,491	7,618	7,618
	PM Peak Hour	NB	4,258	4,263	4,942	4,947	6,023	6,028
		SB	4,324	4,324	5,057	5,057	6,151	6,151
US 101 between Sunset Boulevard & Western Avenue	AM Peak Hour	NB	7,161	7,167	8,225	8,231	9,866	9,872
		SB	7,134	7,161	8,086	8,113	9,588	9,615
	PM Peak Hour	NB	4,931	4,952	6,042	6,063	7,622	7,643
		SB	5,025	5,038	6,167	6,180	7,717	7,730

Notes

[a] Existing traffic volume based on available typical weekday data for January 2017 from Caltrans' Performance Measurement System (PeMS).

TABLE G-4
EXISTING OPERATING CONDITIONS
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION

ID	Freeway Segment	Peak Hour	Direction	Existing Conditions			Existing with Project Conditions		
				Speed [a][b]	Density [b][c]	LOS	Speed [a][b]	Density [b][c]	LOS
FS-1.	US 101 between Highland Avenue & Cahuenga Boulevard	AM	NB	51	42	E	51	43	E
			SB	55	32	D	55	32	D
		PM	NB	55	34	D	55	34	D
			SB	55	27	D	55	27	D
FS-2.	US 101 between Cahuenga Boulevard & Gower Street/Argyle Avenue	AM	NB	55	28	D	55	28	D
			SB	55	28	D	55	28	D
		PM	NB	55	23	C	55	23	C
			SB	55	23	C	55	23	C
FS-3.	US 101 between Gower Street/Argyle Avenue & Hollywood Boulevard	AM	NB	55	30	D	55	30	D
			SB	55	30	D	55	30	D
		PM	NB	55	23	C	55	23	C
			SB	55	23	C	55	23	C
FS-4.	US 101 between Hollywood Boulevard & Sunset Boulevard	AM	NB	55	29	D	55	29	D
			SB	55	29	D	55	29	D
		PM	NB	55	21	C	55	21	C
			SB	55	21	C	55	21	C
FS-5.	US 101 between Sunset Boulevard & Western Avenue	AM	NB	54	36	E	54	36	E
			SB	55	36	E	54	36	E
		PM	NB	55	24	C	55	24	C
			SB	55	25	C	55	25	C

Notes

[a] Mean speed measured in miles per hour (mph).

[b] Methodology from *2010 Highway Capacity Manual* (Transportation Research Board, 2010).

[c] Measured in vehicles per mile per lane (v/m/l) for freeways with a free-flow speed of 55 mph. Free-flow speed, as defined in HCM 2010, is the theoretical speed when the density and flow rate of the freeway mainline segment are both zero.

TABLE G-5
FUTURE OPERATING CONDITIONS (YEAR 2023)
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION

ID	Freeway Segment	Peak Hour	Direction	Future without Project Conditions			Future with Project Conditions		
				Speed [a][b]	Density [b][c]	LOS	Speed [a][b]	Density [b][c]	LOS
FS-1.	US 101 between Highland Avenue & Cahuenga Boulevard	AM	NB	45	54	F	45	55	F
			SB	54	36	E	54	36	E
		PM	NB	52	40	E	52	41	E
			SB	55	31	D	55	31	D
FS-2.	US 101 between Cahuenga Boulevard & Gower Street/Argyle Avenue	AM	NB	55	32	D	55	32	D
			SB	55	32	D	55	32	D
		PM	NB	55	27	D	55	27	D
			SB	55	27	D	55	28	D
FS-3.	US 101 between Gower Street/Argyle Avenue & Hollywood Boulevard	AM	NB	55	33	D	55	33	D
			SB	55	33	D	55	33	D
		PM	NB	55	26	C	55	26	C
			SB	55	26	D	55	26	D
FS-4.	US 101 between Hollywood Boulevard & Sunset Boulevard	AM	NB	55	32	D	55	32	D
			SB	55	32	D	55	32	D
		PM	NB	55	24	C	55	24	C
			SB	55	25	C	55	25	C
FS-5.	US 101 between Sunset Boulevard & Western Avenue	AM	NB	50	44	E	50	44	E
			SB	51	43	E	51	43	E
		PM	NB	55	30	D	55	30	D
			SB	55	30	D	55	31	D

Notes

[a] Mean speed measured in miles per hour (mph).

[b] Methodology from *2010 Highway Capacity Manual* (Transportation Research Board, 2010).

[c] Measured in vehicles per mile per lane (v/m/l) for freeways with a free-flow speed of 55 mph. Free-flow speed, as defined in HCM 2010, is the theoretical speed when the density and flow rate of the freeway mainline segment are both zero.

TABLE G-6
FUTURE OPERATING CONDITIONS (YEAR 2035)
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION

ID	Freeway Segment	Peak Hour	Direction	Future without Project Conditions			Future with Project Conditions		
				Speed [a][b]	Density [b][c]	LOS	Speed [a][b]	Density [b][c]	LOS
FS-1.	US 101 between Highland Avenue & Cahuenga Boulevard	AM	NB	27	108	F	26	110	F
			SB	48	48	F	48	48	F
		PM	NB	40	64	F	40	64	F
			SB	53	39	E	53	39	E
FS-2.	US 101 between Cahuenga Boulevard & Gower Street/Argyle Avenue	AM	NB	53	40	E	53	40	E
			SB	53	39	E	53	39	E
		PM	NB	55	35	D	55	35	D
			SB	55	34	D	55	34	D
FS-3.	US 101 between Gower Street/Argyle Avenue & Hollywood Boulevard	AM	NB	52	41	E	52	41	E
			SB	52	41	E	52	41	E
		PM	NB	55	32	D	55	32	D
			SB	55	32	D	55	32	D
FS-4.	US 101 between Hollywood Boulevard & Sunset Boulevard	AM	NB	53	39	E	53	39	E
			SB	53	39	E	53	39	E
		PM	NB	55	30	D	55	30	D
			SB	55	30	D	55	30	D
FS-5.	US 101 between Sunset Boulevard & Western Avenue	AM	NB	36	74	F	36	75	F
			SB	39	67	F	39	67	F
		PM	NB	53	39	E	53	39	E
			SB	53	40	E	53	40	E

Notes

[a] Mean speed measured in miles per hour (mph).

[b] Methodology from *2010 Highway Capacity Manual* (Transportation Research Board, 2010).

[c] Measured in vehicles per mile per lane (v/m/l) for freeways with a free-flow speed of 55 mph. Free-flow speed, as defined in HCM 2010, is the theoretical speed when the density and flow rate of the freeway mainline segment are both zero.

**TABLE G-7
PROPORTION OF PROJECTED FUTURE TRAFFIC
FUTURE YEAR 2035 CONDITIONS**

Freeway Mainline Segment	Peak Hour	Direction	Vehicles per Hour (VPH)					Proportion of Projected Future Traffic
			Existing	Related Projects	Ambient Growth	Project	Total Growth	
US 101 between Highland Avenue & Cahuenga Boulevard	AM Peak Hour	NB	8,036	976	1,576	19	2,571	0.74%
		SB	8,018	1,098	1,572	6	2,676	0.22%
	PM Peak Hour	NB	6,813	1,327	1,336	8	2,671	0.30%
		SB	6,835	1,415	1,340	19	2,774	0.68%
US 101 between Cahuenga Boulevard & Gower Street/Argyle Avenue	AM Peak Hour	NB	5,666	977	1,111	19	2,107	0.90%
		SB	5,677	886	1,113	6	2,005	0.30%
	PM Peak Hour	NB	4,702	1,350	922	8	2,280	0.35%
		SB	4,722	1,162	926	19	2,107	0.90%
US 101 between Gower Street/Argyle Avenue & Hollywood Boulevard	AM Peak Hour	NB	5,987	659	1,174	1	1,834	0.05%
		SB	5,984	684	1,173	0	1,857	0.00%
	PM Peak Hour	NB	4,552	958	893	5	1,856	0.27%
		SB	4,605	892	903	0	1,795	0.00%
US 101 between Hollywood Boulevard & Sunset Boulevard	AM Peak Hour	NB	5,861	610	1,149	1	1,760	0.06%
		SB	5,871	596	1,151	0	1,747	0.00%
	PM Peak Hour	NB	4,258	930	835	5	1,770	0.28%
		SB	4,324	979	848	0	1,827	0.00%
US 101 between Sunset Boulevard & Western Avenue	AM Peak Hour	NB	7,161	1,301	1,404	6	2,711	0.22%
		SB	7,134	1,055	1,399	27	2,481	1.09%
	PM Peak Hour	NB	4,931	1,724	967	21	2,712	0.77%
		SB	5,025	1,707	985	13	2,705	0.48%

TABLE G-8
CALTRANS INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description	Delay [a]	
		Signalized Intersections	Unsignalized Intersections
A	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.	≤ 10	0.0 - 10.0
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.	> 10 and ≤ 20	10.1 - 15.0
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.	> 20 and ≤ 35	15.1 - 25.0
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.	> 35 and ≤ 55	25.1 - 35.0
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.	> 55 and ≤ 80	35.1 - 50.0
F	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.	> 80	> 50.0

Notes

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

[a] Measured in seconds.

**TABLE G-9
EXISTING WITH PROJECT CONDITIONS
INTERSECTION LEVELS OF SERVICE**

No.	Intersection	Peak Hour	Existing		Existing with Project	
			Delay	LOS	Delay	LOS
Signalized Freeway Ramp Intersections						
S-1.	Vine Street & Franklin Ave/US 101 Northbound On-Ramp	AM PM	22.4 18.7	C B	23.3 18.6	C B
S-2.	Argyle Ave/US 101 Northbound On-Ramp & Franklin Ave	AM PM	23.6 25.2	C C	24.4 25.7	C C
Unsignalized Freeway Ramp Intersections						
U-1.	Argyle Avenue & US 101 Southbound On-Ramp	AM PM	8.2 9.7	A A	8.2 9.7	A A
U-2.	Gower Street & US 101 Northbound Off-Ramp	AM PM	27.7 31.2	D D	28.3 32.5	D D
U-3.	Gower Street & US 101 Southbound Off-Ramp	AM PM	76.1 65.4	F F	78.6 70.1	F F
U-4.	US 101 Southbound Off-Ramp/Van Ness Avenue & Harold Way	AM PM	13.1 10.3	B B	13.1 10.3	B B
U-5	Wilton Place & Harold Way/US 101 Northbound Off-Ramp	AM PM	13.0 7.6	B A	13.0 7.6	B A
U-6.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	32.0 74.4	D F	33.5 76.6	D F

Delay is measured in seconds per vehicle
LOS = Level of service
Results per Vistro 4 (HCM methodology).

TABLE G-10
FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Future without Project		Future with Project	
			Delay	LOS	Delay	LOS
Signalized Freeway Ramp Intersections						
S-1.	Vine Street & Franklin Ave/US 101 Northbound On-Ramp	AM PM	45.1 20.4	D C	46.5 20.5	D C
S-2.	Argyle Ave/US 101 Northbound On-Ramp & Franklin Ave	AM PM	39.4 41.6	D D	41.2 42.9	D D
Unsignalized Freeway Ramp Intersections						
U-1.	Argyle Avenue & US 101 Southbound On-Ramp	AM PM	8.7 10.7	A B	8.7 10.7	A B
U-2.	Gower Street & US 101 Northbound Off-Ramp	AM PM	52.7 92.9	F F	54.8 102.0	F F
U-3.	Gower Street & US 101 Southbound Off-Ramp	AM PM	162.6 196.4	F F	167.6 207.8	F F
U-4.	US 101 Southbound Off-Ramp/Van Ness Avenue & Harold Way	AM PM	14.5 11.0	B B	14.5 11.0	B B
U-5	Wilton Place & Harold Way/US 101 Northbound Off-Ramp	AM PM	14.3 7.8	B A	14.3 7.8	B A
U-6.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	73.9 OVRFLW	F F	79.2 OVRFLW	F F

Delay is measured in seconds per vehicle
LOS = Level of service
OVRFLW = Overflow Conditions
Results per Vistro 4 (HCM methodology).

TABLE G-11
FUTURE WITH PROJECT CONDITIONS (YEAR 2035)
INTERSECTION LEVELS OF SERVICE

No.	Intersection	Peak Hour	Future without Project		Future with Project	
			Delay	LOS	Delay	LOS
Signalized Freeway Ramp Intersections						
S-1.	Vine Street & Franklin Ave/US 101 Northbound On-Ramp	AM PM	89.3 39.4	F D	91.0 42.6	F D
S-2.	Argyle Ave/US 101 Northbound On-Ramp & Franklin Ave	AM PM	86.0 94.2	F F	87.3 96.1	F F
Unsignalized Freeway Ramp Intersections						
U-1.	Argyle Avenue & US 101 Southbound On-Ramp	AM PM	9.6 13.0	A B	9.7 13.1	A B
U-2.	Gower Street & US 101 Northbound Off-Ramp	AM PM	OVRFLW OVRFLW	F F	OVRFLW OVRFLW	F F
U-3.	Gower Street & US 101 Southbound Off-Ramp	AM PM	OVRFLW OVRFLW	F F	OVRFLW OVRFLW	F F
U-4.	US 101 Southbound Off-Ramp/Van Ness Avenue & Harold Way	AM PM	18.2 12.5	C B	18.2 12.5	C B
U-5	Wilton Place & Harold Way/US 101 Northbound Off-Ramp	AM PM	18.6 8.1	C A	18.6 8.1	C A
U-6.	US 101 Southbound On-Ramp & Sunset Boulevard	AM PM	OVRFLW OVRFLW	F F	OVRFLW OVRFLW	F F

Delay is measured in seconds per vehicle
LOS = Level of service
OVRFLW = Overflow Conditions
Results per Vistro 4 (HCM methodology).

**TABLE G-12
FREEWAY OFF-RAMP QUEUE EVALUATION
EXISTING OPERATING CONDITIONS**

ID	Freeway Off-ramp	Ramp and Lane Description	Vehicle Storage Capacity [a]	Existing Conditions				Existing with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1. [c]	Vine Street &	US 101 Southbound Off-Ramp									
	Franklin Avenue/US 101 SB Off-Ramp	Left	925	88		254		88		253	
		Right	925	380		33		391		34	
		Ramp	485	0	NO	0	NO	0	NO	0	NO
Q-2.	Gower Street &	US 101 Northbound Off-Ramp									
	US 101 NB Off-Ramp	Left	430	81		26		83		30	
		Right	430	11		15		11		15	
		Ramp	230	0	NO	0	NO	0	NO	0	NO
Q-3.	Gower Street &	US 101 Southbound Off-Ramp									
	US 101 SB Off-Ramp/Yucca Street	Shared Left/Through	290	200		213		203		221	
		Shared Through/Right	290	196		38		197		38	
		Ramp	750	0	NO	0	NO	0	NO	0	NO
Q-4.	US 101 SB Off-Ramp/Van Ness &										
	Harold Way	Through	267	99		56		99		56	
		Right	267	96		56		96		56	
		Ramp	566	0	NO	0	NO	0	NO	0	NO
Q-5. [d]	Wilton Place &										
	US 101 NB Off-Ramp/Harold Way	Shared EB Left/Through	306	15		3		15		3	
		EB Right	306	58		5		58		5	
		Ramp	330	0	NO	0	NO	0	NO	0	NO

[a] Expressed in feet.

[b] 95th Percentile queue results per Vistro 4 (Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010).

[c] The right-turn from the off-ramp is a channelized free right-turn.

[d] Intersection has a free-flow off-ramp to Sunset Boulevard in the westbound direction.

**TABLE G-13
FREEWAY OFF-RAMP QUEUE EVALUATION
FUTURE OPERATING CONDITIONS (YEAR 2023)**

ID	Freeway Off-ramp	Ramp and Lane Description	Vehicle Storage Capacity [a]	Future without Project Conditions				Future with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1. [c]	Vine Street &	US 101 Southbound Off-Ramp									
	Franklin Avenue/US 101 SB Off-Ramp	Left	925	125		265		125		265	
		Right	925	962		54		973		57	
		Ramp	485	0	NO	0	NO	14	NO	0	NO
Q-2.	Gower Street &	US 101 Northbound Off-Ramp									
	US 101 NB Off-Ramp	Left	430	169		137		174		149	
		Right	430	14		22		14		22	
		Ramp	230	0	NO	0	NO	0	NO	0	NO
Q-3.	Gower Street &	US 101 Southbound Off-Ramp									
	US 101 SB Off-Ramp/Yucca Street	Shared Left/Through	290	274		274		274		274	
		Shared Through/Right	290	274		58		274		59	
		Ramp	750	119	NO	108	NO	126	NO	118	NO
Q-4.	US 101 SB Off-Ramp/Van Ness &										
	Harold Way	Through	267	118		67		118		67	
		Right	267	115		67		115		67	
		Ramp	566	0	NO	0	NO	0	NO	0	NO
Q-5. [d]	Wilton Place &										
	US 101 NB Off-Ramp/Harold Way	Shared EB Left/Through	306	17		3		17		3	
		EB Right	306	71		8		71		8	
		Ramp	330	0	NO	0	NO	0	NO	0	NO

[a] Expressed in feet.

[b] 95th Percentile queue results per Vistro 4 (Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010).

[c] The right-turn from the off-ramp is a channelized free right-turn.

[d] Intersection has a free-flow off-ramp to Sunset Boulevard in the westbound direction.

TABLE G-14
FREEWAY OFF-RAMP QUEUE EVALUATION
FUTURE OPERATING CONDITIONS (YEAR 2035)

ID	Freeway Off-ramp	Ramp and Lane Description	Vehicle Storage Capacity [a]	Future without Project Conditions				Future with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1. [c]	Vine Street &	US 101 Southbound Off-Ramp									
	Franklin Avenue/US 101 SB Off-Ramp	Left	925	162		292		142		288	
		Right	925	973		170		973		192	
		Ramp	485	1,455	YES	0	NO	1,485	YES	0	NO
Q-2.	Gower Street &	US 101 Northbound Off-Ramp									
	US 101 NB Off-Ramp	Left	430	431		431		431		431	
		Right	430	20		37		20		37	
		Ramp	230	34	NO	83	NO	43	NO	101	NO
Q-3.	Gower Street &	US 101 Southbound Off-Ramp									
	US 101 SB Off-Ramp/Yucca Street	Shared Left/Through	290	274		274		274		274	
		Shared Through/Right	290	274		126		274		129	
		Ramp	750	846	YES	419	NO	853	YES	429	NO
Q-4.	US 101 SB Off-Ramp/Van Ness &										
	Harold Way	Through	267	161		92		170		92	
		Right	267	164		91		164		91	
		Ramp	566	0	NO	0	NO	0	NO	0	NO
Q-5. [d]	Wilton Place &										
	US 101 NB Off-Ramp/Harold Way	Shared EB Left/Through	306	21		4		21		4	
		EB Right	306	110		14		110		14	
		Ramp	330	0	NO	0	NO	0	NO	0	NO

[a] Expressed in feet.

[b] 95th Percentile queue results per Vistro 4 (Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010).

[c] The right-turn from the off-ramp is a channelized free right-turn.

[d] Intersection has a free-flow off-ramp to Sunset Boulevard in the westbound direction.

Attachment

Level of Service Worksheets

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,036 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 42.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	2,181 pc/h/ln		
Speed (S):	51.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,018 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,741 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,813 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 33.7$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 1,849$ pc/h/ln			
Speed (S):	54.9 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,835 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,484 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,666 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,538 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,677 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,541 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,702 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):	Density (D):	$\frac{v_p}{S} = 23.2$	pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 1,276$			
Speed (S):	Level of Service (LOS):	C	
55.0 mi/h			

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,722 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 23.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,281 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,987 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,625 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,984 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,624 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,552 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 22.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,235 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,605 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 22.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,250 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,861 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,591 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,871 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,593 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,258 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 21.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,156 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,324 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 21.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,173 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,161 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,943 pc/h/ln		
Speed (S):	54.5 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,134 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,936 pc/h/ln		
Speed (S):	54.5 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,931 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,338 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,025 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,364 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,055 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84) =	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 42.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,186 pc/h/ln		
Speed (S):	51.3 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,024 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,742 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,821 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 33.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,851 pc/h/ln		
Speed (S):	54.9 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,854 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,488 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,685 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,543 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,683 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,542 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,710 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 23.2 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,278 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,741 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 23.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,287 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,988 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,625 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,984 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,624 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,557 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 22.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,237 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,605 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 22.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,250 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,862 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,591 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,871 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,593 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,263 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 21.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,157 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,324 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84) =	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 21.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,173 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,167 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,945 pc/h/ln		
Speed (S):	54.5 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,161 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,943 pc/h/ln		
Speed (S):	54.5 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,952 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,344 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,038 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,367 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,990 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84) =	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 54.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,440 pc/h/ln		
Speed (S):	44.9 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,982 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 35.8$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 1,950$ pc/h/ln			
Speed (S):	54.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,812 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,120 pc/h/ln		
Speed (S):	52.5 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,924 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,720 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,474 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,757 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,391 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,734 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,480 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,487 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,554 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,507 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,668 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,810 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,655 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,806 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,268 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 26.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,430 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,311 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 26.2$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 1,441$ pc/h/ln			
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,509 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,766 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,491 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,762 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,942 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,341 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,057 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,372 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,225 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 44.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,232 pc/h/ln		
Speed (S):	50.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,086 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 42.9$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 2,194$ pc/h/ln			
Speed (S):	51.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,042 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,640 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,167 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 30.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,674 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,009 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 54.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,445 pc/h/ln		
Speed (S):	44.7 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,988 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,951 pc/h/ln		
Speed (S):	54.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,820 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 40.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,122 pc/h/ln		
Speed (S):	52.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,943 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 31.3$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 1,724$ pc/h/ln			
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,493 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,762 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,397 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,736 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,488 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,489 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,573 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,512 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,669 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,810 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,655 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 32.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,806 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,273 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 26.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,431 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,311 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 26.2 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,441 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,510 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,767 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,491 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,762 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,947 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,343 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,057 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,372 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,231 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 44.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	2,234 pc/h/ln		
Speed (S):	50.3 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,113 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 43.2 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,202 pc/h/ln		
Speed (S):	51.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,063 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,645 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,180 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 30.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,677 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	10,588 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 108.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,873 pc/h/ln		
Speed (S):	26.6 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	10,688 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 48.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,320 pc/h/ln		
Speed (S):	48.3 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,476 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84) =	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 63.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,572 pc/h/ln		
Speed (S):	40.3 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,590 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 39.3$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 2,082$ pc/h/ln			
Speed (S):	53.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,754 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 39.9$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 2,104$ pc/h/ln			
Speed (S):	52.7 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,676 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,083 pc/h/ln		
Speed (S):	53.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,974 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 34.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,893 pc/h/ln		
Speed (S):	54.8 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,810 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):	Density (D):	$\frac{v_p}{S}$	= 33.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$			
= 1,848 pc/h/ln			
Speed (S):	Level of Service (LOS):		D
54.9 mi/h			

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,820 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 40.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,122 pc/h/ln		
Speed (S):	52.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,841 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,128 pc/h/ln		
Speed (S):	52.3 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,403 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,738 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,400 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,737 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,620 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84) =	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 38.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,068 pc/h/ln		
Speed (S):	53.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,618 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 38.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,067 pc/h/ln		
Speed (S):	53.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,023 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,635 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,151 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 30.3$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,669 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,866 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 74.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	2,677 pc/h/ln		
Speed (S):	36.0 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,588 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 66.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,602 pc/h/ln		
Speed (S):	39.1 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,622 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 38.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,068 pc/h/ln		
Speed (S):	53.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,717 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,094 pc/h/ln		
Speed (S):	52.9 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	10,607 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 109.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,879 pc/h/ln		
Speed (S):	26.3 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	10,694 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 48.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,322 pc/h/ln		
Speed (S):	48.3 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,484 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 64.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,574 pc/h/ln		
Speed (S):	40.2 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,609 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,086 pc/h/ln		
Speed (S):	53.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,773 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,109 pc/h/ln		
Speed (S):	52.6 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,682 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,085 pc/h/ln		
Speed (S):	53.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,982 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 34.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,895 pc/h/ln		
Speed (S):	54.8 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,829 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 33.7$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 1,853$ pc/h/ln			
Speed (S):	54.9 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,821 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,123 pc/h/ln		
Speed (S):	52.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,841 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,128 pc/h/ln		
Speed (S):	52.3 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,408 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,739 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,400 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,737 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,621 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 38.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,068 pc/h/ln		
Speed (S):	53.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,618 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 38.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,067 pc/h/ln		
Speed (S):	53.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,028 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,636 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,151 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 30.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,669 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,872 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 74.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,679 pc/h/ln		
Speed (S):	35.9 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,615 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 67.2 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,609 pc/h/ln		
Speed (S):	38.8 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,643 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 39.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,074 pc/h/ln		
Speed (S):	53.1 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,730 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S} = 39.7$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,098 pc/h/ln		
Speed (S):	52.8 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,051 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 42.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,185 pc/h/ln		
Speed (S):	51.3 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,020 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,741 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,823 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 33.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,852 pc/h/ln		
Speed (S):	54.9 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,854 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,488 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,681 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):	Density (D):	$\frac{v_p}{S}$	= 28.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$			
= 1,542 pc/h/ln			
Speed (S):	Level of Service (LOS):		D
55.0 mi/h			

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,679 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,541 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,712 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 23.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,279 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,741 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 23.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,287 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,988 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,625 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,984 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S} = 29.5$ pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	1,624 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,557 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 22.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,237 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,605 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 22.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,250 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,862 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 28.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,591 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,871 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,593 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,263 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 21.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,157 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,324 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 21.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,173 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,165 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,944 pc/h/ln		
Speed (S):	54.5 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,159 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,943 pc/h/ln		
Speed (S):	54.5 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,952 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,344 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2017)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,039 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,368 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,005 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 54.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,444 pc/h/ln		
Speed (S):	44.8 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,984 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 35.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,950 pc/h/ln		
Speed (S):	54.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,822 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	2,123 pc/h/ln		
Speed (S):	52.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,943 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,724 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,489 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):	Density (D):	$\frac{v_p}{S}$	= 32.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$			
= 1,761 pc/h/ln			
Speed (S):	Level of Service (LOS):		D
55.0 mi/h			

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,393 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,735 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,490 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 27.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,490 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,573 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.980	- 3.22TRD^(0.84)	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):	Density (D):	$\frac{v_p}{S} = 27.5$	pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p} = 1,512$			
Speed (S):	Level of Service (LOS):	D	
55.0 mi/h			

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,669 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,810 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,655 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P_T):	4.04 %	Right-shoulder	
% RVs (P_R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f_p):	1.00	Lane Width (f_{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f_{LC}):	mi/h
for Trucks & Buses (E_T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E_R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f_{HV}):		75.4 - f_{LW} - f_{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD ^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v_p):		Density (D):	$\frac{v_p}{S}$ = 32.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,806 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,273 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 26.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,431 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,311 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 26.2 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,441 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,510 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,767 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,491 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 32.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,762 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	4,947 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,343 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	5,057 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 24.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,372 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	C

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,229 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 44.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,233 pc/h/ln		
Speed (S):	50.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	8,111 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 43.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,201 pc/h/ln		
Speed (S):	51.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,063 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,645 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2023)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,181 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 30.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,677 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	10,603 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 109.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,877 pc/h/ln		
Speed (S):	26.4 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	10,690 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 48.1 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,321 pc/h/ln		
Speed (S):	48.3 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Northbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,486 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 64.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,574 pc/h/ln		
Speed (S):	40.2 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-1 US 101 Southbound

between Highland Avenue & Cahuenga Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,609 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	5.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.4 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,086 pc/h/ln		
Speed (S):	53.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,769 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,108 pc/h/ln		
Speed (S):	52.7 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,678 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,084 pc/h/ln		
Speed (S):	53.0 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Northbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,984 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84) =	mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 34.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,895 pc/h/ln		
Speed (S):	54.8 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-2 US 101 Southbound

between Cahuenga Boulevard & Gower Street/Argyle Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,829 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 33.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,853 pc/h/ln		
Speed (S):	54.9 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,821 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.5 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,123 pc/h/ln		
Speed (S):	52.4 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,841 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 40.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,128 pc/h/ln		
Speed (S):	52.3 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Northbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,408 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,739 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-3 US 101 Southbound

between Gower Street/Argyle Avenue & Hollywood Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,400 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 31.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,737 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,621 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 38.9 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,068 pc/h/ln		
Speed (S):	53.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,618 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 38.8 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,067 pc/h/ln		
Speed (S):	53.2 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

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FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Northbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,028 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 29.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,636 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

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FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-4 US 101 Southbound

between Hollywood Boulevard & Sunset Boulevard

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	6,151 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 30.3 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 1,669 pc/h/ln		
Speed (S):	55.0 mi/h	Level of Service (LOS):	D

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

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FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,870 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 74.6 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,679 pc/h/ln		
Speed (S):	35.9 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

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FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

AM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	9,613 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 67.2 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,609 pc/h/ln		
Speed (S):	38.8 mi/h	Level of Service (LOS):	F

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

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FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Northbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,643 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{LW}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{LC}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{LW} - f _{LC}	
1	= 0.980	- 3.22TRD^(0.84)	= mi/h
1 + P _T (E _T - 1) + P _R (E _R - 1)			

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.0 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,074 pc/h/ln		
Speed (S):	53.1 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{LW} from Exhibit 11-8; f_{LC} from Exhibit 11-9; f_p from Page 11-18.

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FUTURE WITH PROJECT CONDITIONS - SUPERMARKET OPTION (YEAR 2035)

Modera Argyle

Highway Capacity Manual 2010 - Basic Freeway Segments Worksheet

FS-5 US 101 Southbound

between Sunset Boulevard & Western Avenue

PM Peak Hour

SPEED AND FLOW INPUTS

Flow Inputs		Speed Inputs	
Volume (V):	7,731 veh/h	[a] Free Flow Speed:	55.0 mph
Peak Hour Factor (PHF):	0.940	Lane Width:	ft
% Trucks & Buses (P _T):	4.04 %	Right-shoulder	
% RVs (P _R):	0.00 %	Lateral Clearance:	ft
Grade Length:	mi	Number of Ramps in 6 miles	
Grade %:	%	Centered on Segment:	ramps
Terrain Type:	Level	Other Inputs	
Driver Type:	Commuter/Weekday	Number of Lanes:	4.0 lanes

SPEED AND FLOW ADJUSTMENT CALCULATIONS

Flow Adjustment Calculations		Speed Adjustment Calculations	
Driver Population Factor (f _p):	1.00	Lane Width (f _{lw}):	mi/h
Passenger Car Equivalents		Lateral Clearance (f _{lc}):	mi/h
for Trucks & Buses (E _T):	1.5	Total Ramp Density (TRD):	ramps/mi
for RVs (E _R):	1.2	Free-Flow Speed:	
Heavy Vehicle Factor (f _{HV}):		75.4 - f _{lw} - f _{lc}	
$\frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	= 0.980	- 3.22TRD^(0.84)	= mi/h

LEVEL OF SERVICE AND PERFORMANCE MEASURES

Flow Rate (v _p):		Density (D):	$\frac{v_p}{S}$ = 39.7 pc/mi/ln
$\frac{V}{PHF * N * f_{HV} * f_p}$	= 2,098 pc/h/ln		
Speed (S):	52.8 mi/h	Level of Service (LOS):	E

Notes: Methodology from 2010 Highway Capacity Manual, Transportation Research Board, 2010.

Adjustment factors from HCM 2010 Chapter 11 as follows: LOS, S, FFS, v_p from Exhibits 11-5 and 11-6; E_R/E_T from Exhibits 11-10 through 11-13; f_{lw} from Exhibit 11-8; f_{lc} from Exhibit 11-9; f_p from Page 11-18.

[a] Free Flow Speed of 55 mi/h was used for segments at Caltrans' request.

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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExAM.pdf

Scenario 1: Ex AM
5/19/2017

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.279	22.4	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.623	23.6	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.074	8.2	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.556	27.7	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.103	76.1	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.061	28.3	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		13.1	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		13.0	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.266	32.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.279

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	113	0	242	386	0	44	0	0	898	0	130	1448
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	0	242	386	0	44	0	0	898	0	130	1448
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	61	97	0	11	0	0	225	0	33	362
Total Analysis Volume [veh/h]	113	0	242	386	0	44	0	0	898	0	130	1448
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	0	45	0	45	0	0	65	0	20	25
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	22	22	57	30	82
g / C, Green / Cycle	0.28	0.28	0.25	0.25	0.63	0.34	0.91
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.11	0.03	0.25	0.07	0.91
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	502	448	877	391	2228	627	1443
d1, Uniform Delay [s]	24.73	27.33	28.63	26.25	8.33	21.30	2.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.04	4.62	0.35	0.13	0.12	0.16	24.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.54	0.44	0.11	0.40	0.21	1.00
d, Delay for Lane Group [s/veh]	25.76	31.95	28.98	26.37	8.45	21.46	27.50
Lane Group LOS	C	C	C	C	A	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.96	4.87	3.50	0.74	3.89	1.94	9.85
50th-Percentile Queue Length [ft]	49.04	121.86	87.42	18.39	97.23	48.54	246.31
95th-Percentile Queue Length [veh]	3.53	8.50	6.29	1.32	7.00	3.50	15.05
95th-Percentile Queue Length [ft]	88.26	212.38	157.35	33.10	175.02	87.38	376.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.76	0.00	31.95	28.98	0.00	26.37	0.00	0.00	8.45	0.00	21.46	27.50
Movement LOS	C		C	C		C			A		C	F
d_A, Approach Delay [s/veh]	29.98			28.71			8.45			27.00		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	22.44											
Intersection LOS	C											
Intersection V/C	0.279											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	208	21	36	72	117	66	187	429	103	138	857	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	208	21	36	72	117	66	187	429	103	138	857	663
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	5	9	18	29	17	47	107	26	35	214	166
Total Analysis Volume [veh/h]	208	21	36	72	117	66	187	429	103	138	857	663
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	20	0	36	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	8	8	8	62	49	49	9	53	53
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.09	0.69	0.55	0.55	0.10	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.02	0.04	0.06	0.04	0.36	0.12	0.07	0.08	0.42	0.45
s, saturation flow rate [veh/h]	1774	1790	1583	1774	1863	1583	517	3547	1583	1774	1863	1606
c, Capacity [veh/h]	157	158	140	156	164	139	353	1939	865	177	1088	938
d1, Uniform Delay [s]	40.06	40.06	38.36	39.09	40.02	39.14	16.44	10.55	9.92	39.62	13.54	14.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.35	6.26	0.96	2.12	5.67	2.49	5.60	0.26	0.28	7.24	4.23	6.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.73	0.26	0.46	0.71	0.47	0.53	0.22	0.12	0.78	0.73	0.78
d, Delay for Lane Group [s/veh]	46.41	46.32	39.32	41.21	45.69	41.62	22.05	10.81	10.20	46.86	17.77	20.67
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.71	2.72	0.77	1.59	2.75	1.47	1.56	2.13	1.00	3.30	11.54	11.70
50th-Percentile Queue Length [ft]	67.72	68.10	19.31	39.72	68.71	36.75	38.99	53.19	24.90	82.44	288.62	292.45
95th-Percentile Queue Length [veh]	4.88	4.90	1.39	2.86	4.95	2.65	2.81	3.83	1.79	5.94	17.12	17.31
95th-Percentile Queue Length [ft]	121.89	122.58	34.75	71.49	123.69	66.15	70.19	95.74	44.82	148.39	427.93	432.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.37	46.32	39.32	41.21	45.69	41.62	22.05	10.81	10.20	46.86	18.00	20.67
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	45.41			43.37			13.64			21.47		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	23.65											
Intersection LOS	C											
Intersection V/C	0.623											

Sequence


Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	288	43	91	204	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	288	43	91	204	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	11	23	51	0	0
Total Analysis Volume [veh/h]	288	43	91	204	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.07	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.17	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.24	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	6.01	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.52		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.19					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	27.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	543	0	0	420	192	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	543	0	0	420	192	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	0	0	105	48	22
Total Analysis Volume [veh/h]	543	0	0	420	192	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.56	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	27.69	10.65
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	3.21	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	80.33	10.42
d_A, Approach Delay [s/veh]	0.00		0.00		22.29	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.04					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 76.1
 Level Of Service: F
 Volume to Capacity (v/c): 0.103

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	342	29	24	585	0	214	24	554	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	342	29	24	585	0	214	24	554	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	86	7	6	146	0	54	6	139	0	0	0
Total Analysis Volume [veh/h]	0	342	29	24	585	0	214	24	554	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	0.80	0.10	0.79	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.10	0.00	0.00	74.12	76.12	26.28	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	D			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.03	0.51	0.00	7.97	7.90	7.82	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	25.72	12.86	0.00	199.37	197.45	195.52	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.32			40.72			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	18.31											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	28.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	26	355	903	169	10	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	355	903	169	10	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	89	226	42	3	6
Total Analysis Volume [veh/h]	26	355	903	169	10	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.01	0.00	0.06	0.04
d_M, Delay for Movement [s/veh]	10.81	0.00	0.00	0.00	28.30	13.77
Movement LOS	B	A	A	A	D	B
95th-Percentile Queue Length [veh]	1.23	0.61	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	30.71	15.35	0.00	0.00	8.78	8.78
d_A, Approach Delay [s/veh]	0.74		0.00		18.31	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.58					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

13.1
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	34	0	882	41	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	0	882	41	0	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	221	10	0	6
Total Analysis Volume [veh/h]	34	0	882	41	0	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.12	3.92	3.82	0.07
95th-Percentile Queue Length [ft]	3.08	98.11	95.44	1.67
Approach Delay [s/veh]	7.35	13.51		6.49
Approach LOS	A	B		A
Intersection Delay [s/veh]	13.13			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**



Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

13.0
B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	80	8	3	94	0	2	0	0	0	0
Total Analysis Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.22	1.17	3.67	
95th-Percentile Queue Length [ft]	30.46	29.33	91.83	
Approach Delay [s/veh]	10.76		15.20	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	13.02			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	173	0	5	70	0	60	22	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	0	5	70	0	60	22	259
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	0	1	18	0	15	6	65
Total Analysis Volume [veh/h]	173	0	5	70	0	60	22	259
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	1.89	0.59	2.31
95th-Percentile Queue Length [ft]	47.18	14.84	57.72
Approach Delay [s/veh]	12.44	13.33	
Approach LOS	B	B	
Intersection Delay [s/veh]	13.02		
Intersection LOS	B		

Intersection Level Of Service Report

Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	32.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.266

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1448	236	48	1954
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1448	236	48	1954
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	362	59	12	489
Total Analysis Volume [veh/h]	0	0	1448	236	48	1954
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.27	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	32.03	0.00
Movement LOS			A	A	D	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.02	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	25.60	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.77	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	D					

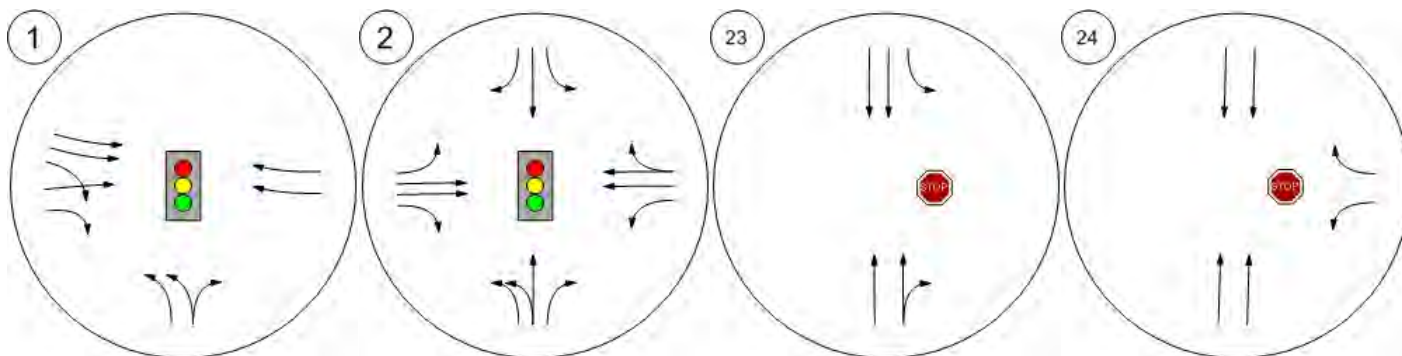
Study Intersections



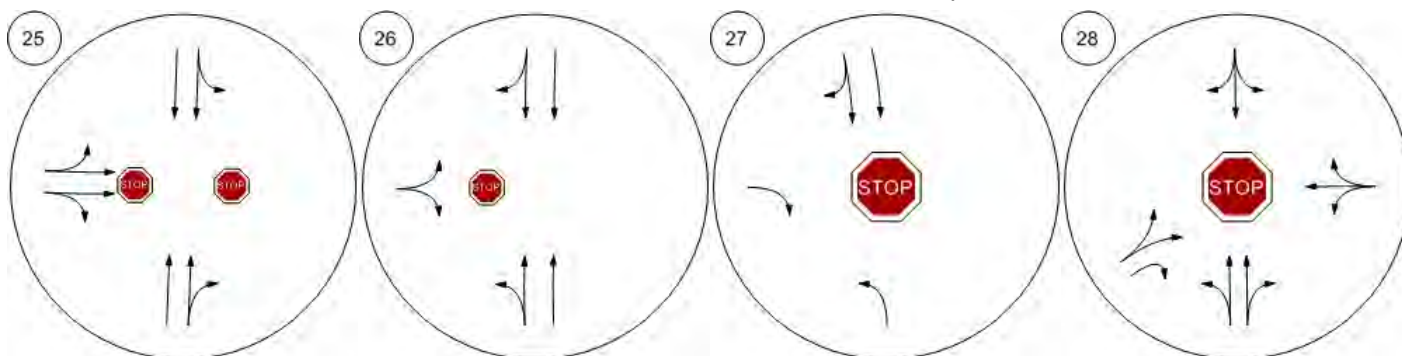
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



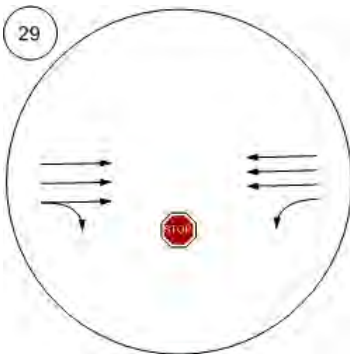
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



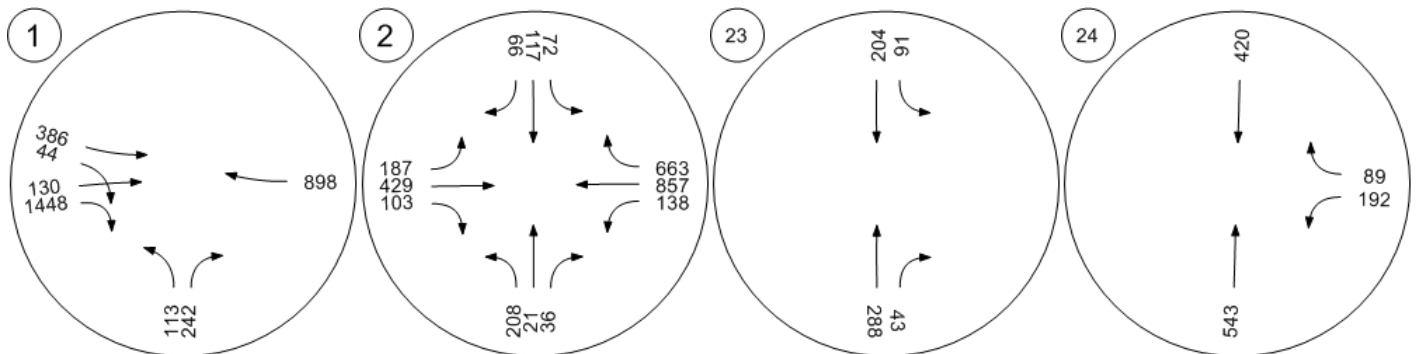
US 101 SB On-ramp & Suns



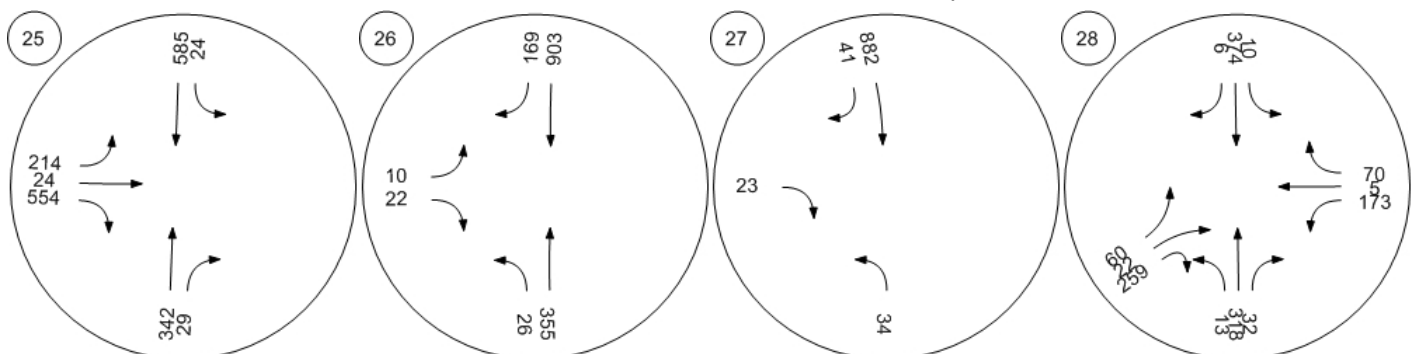
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



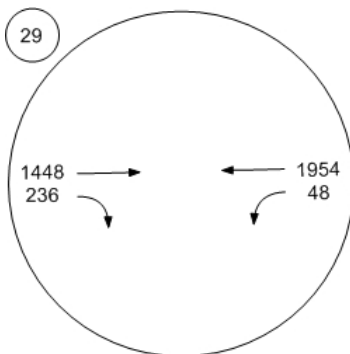
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Base Volume



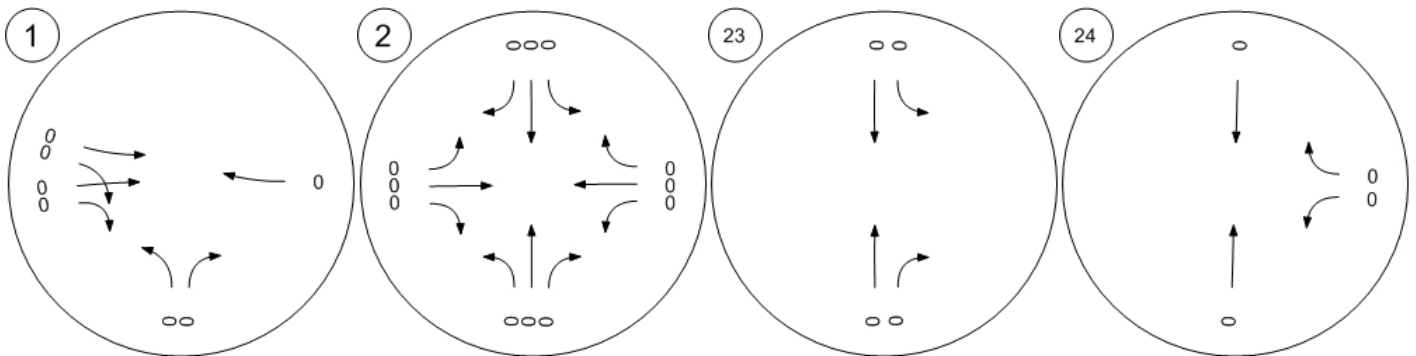
US 101 SB On-ramp & Suns



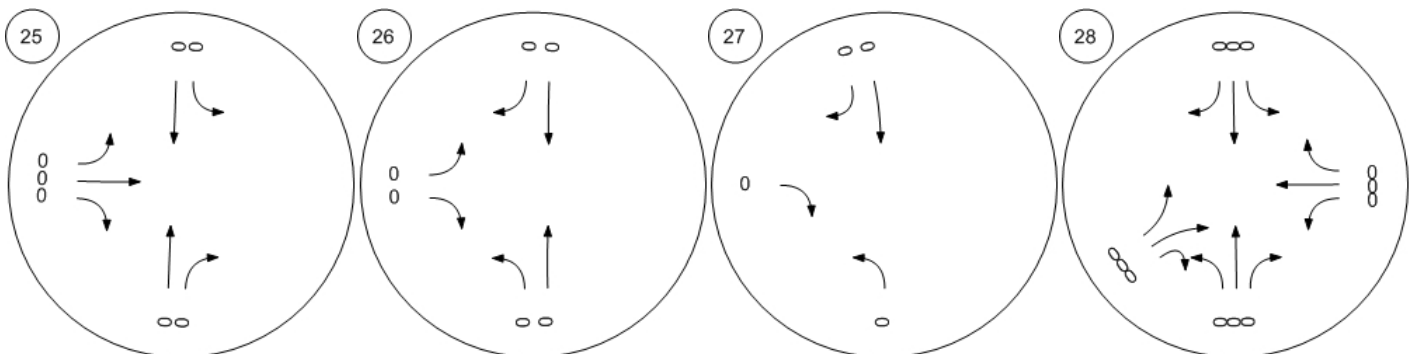
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



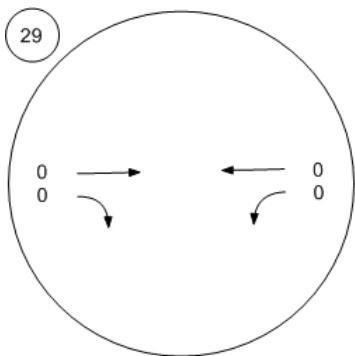
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



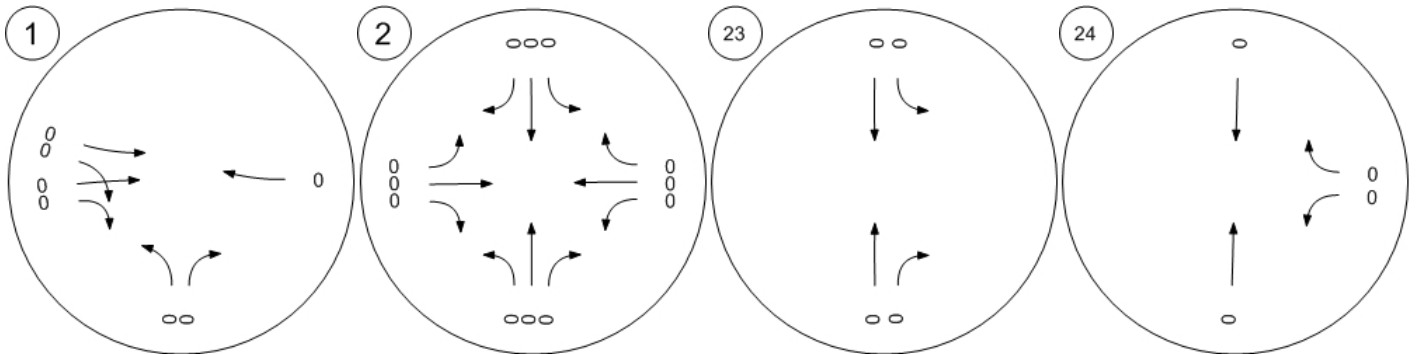
US 101 SB On-ramp & Suns



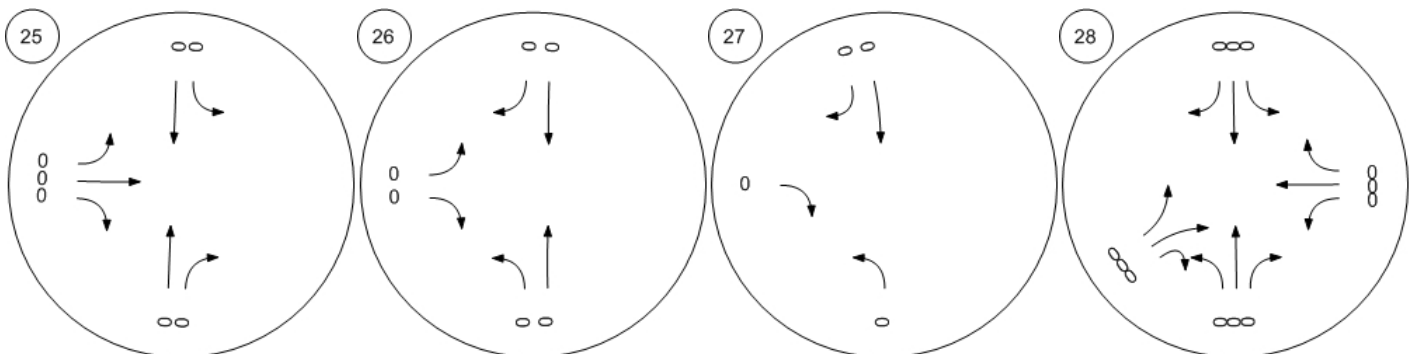
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



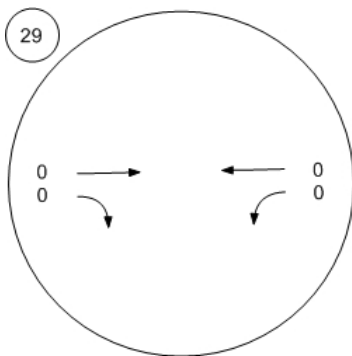
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



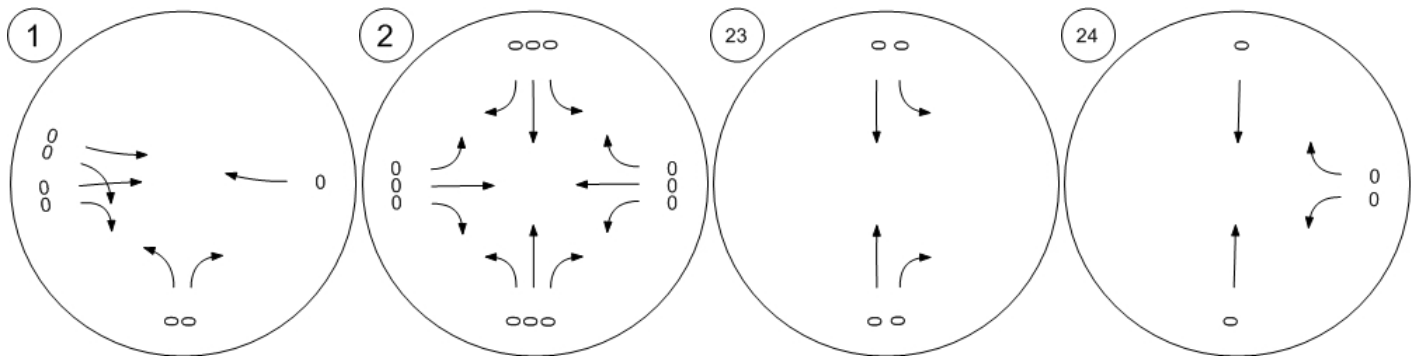
US 101 SB On-ramp & Suns



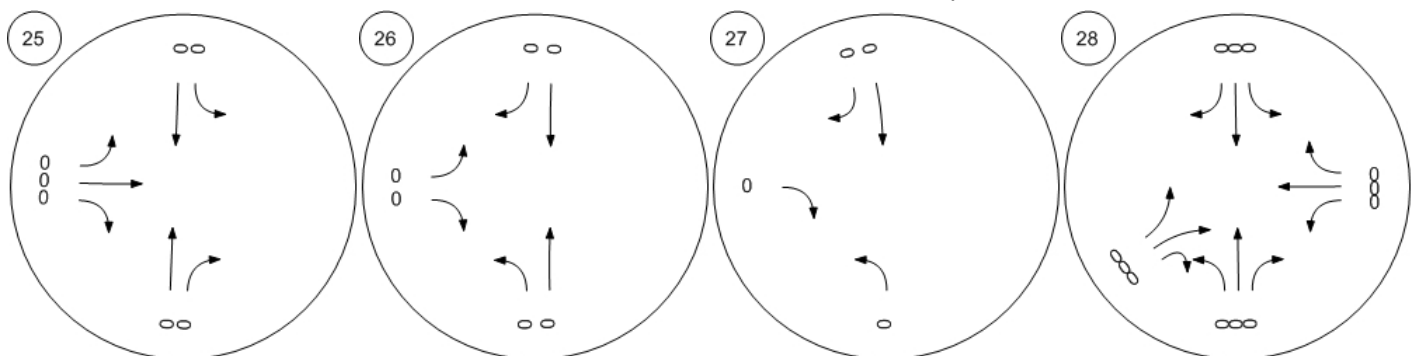
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



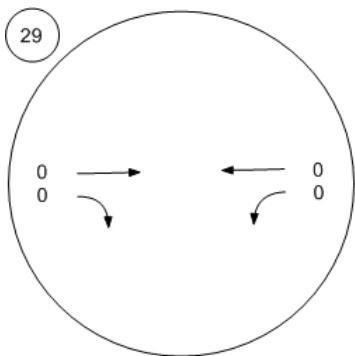
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



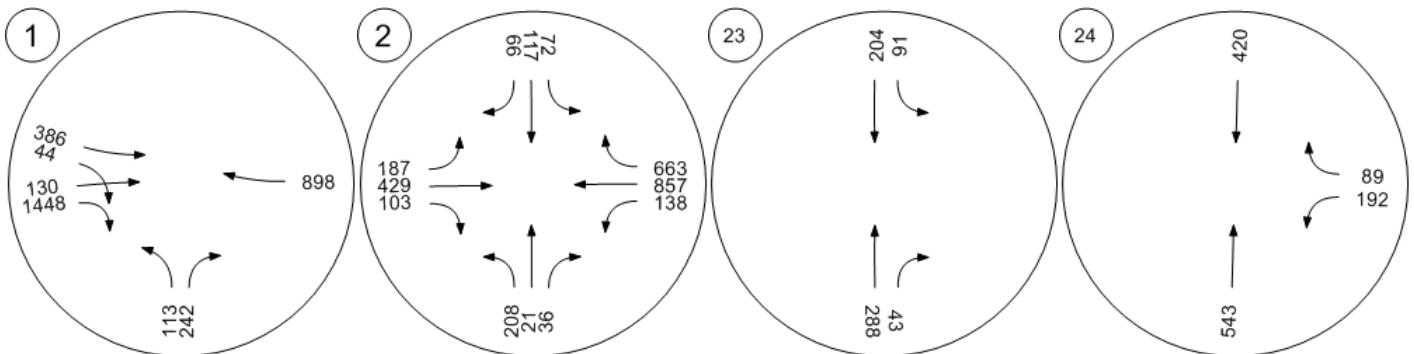
US 101 SB On-ramp & Suns



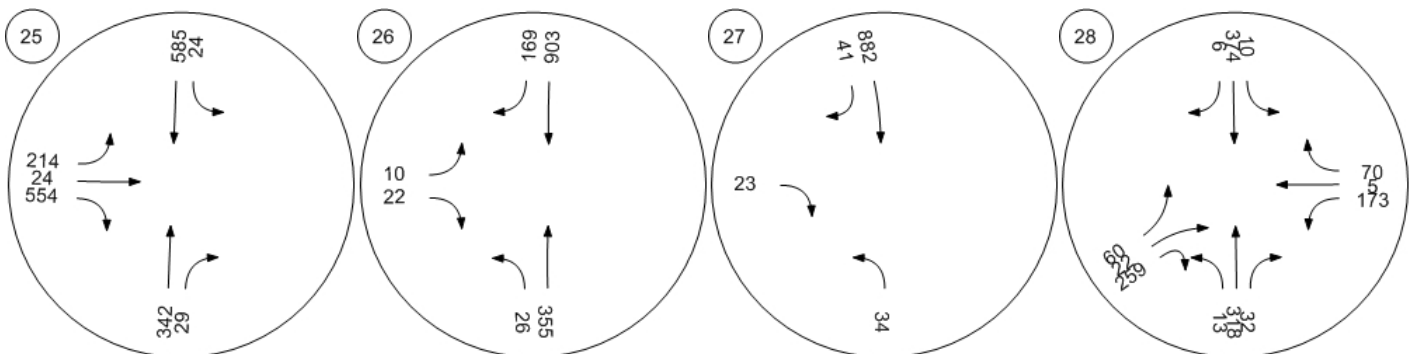
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



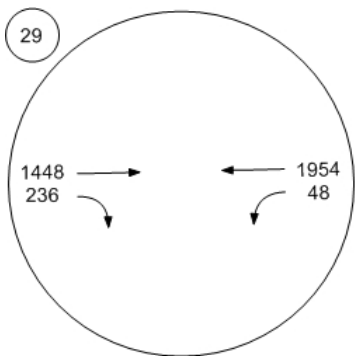
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



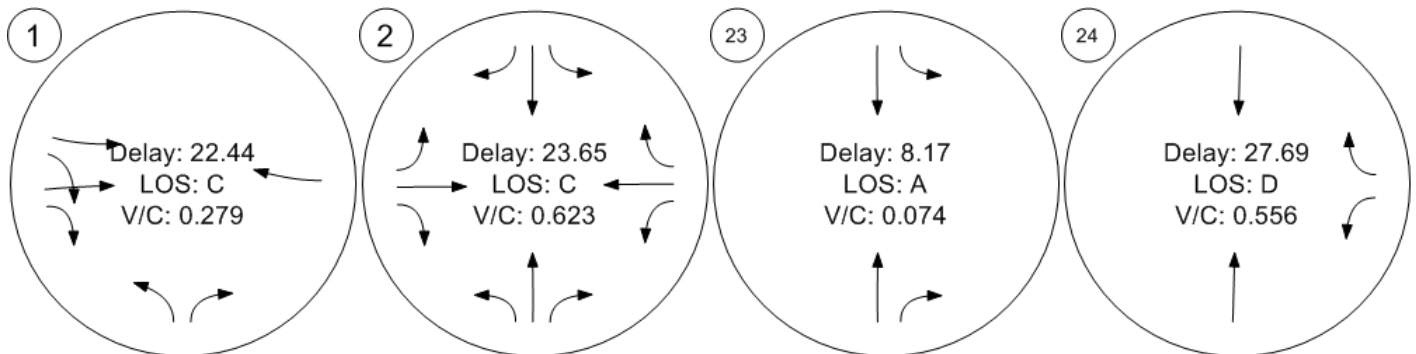
US 101 SB On-ramp & Suns



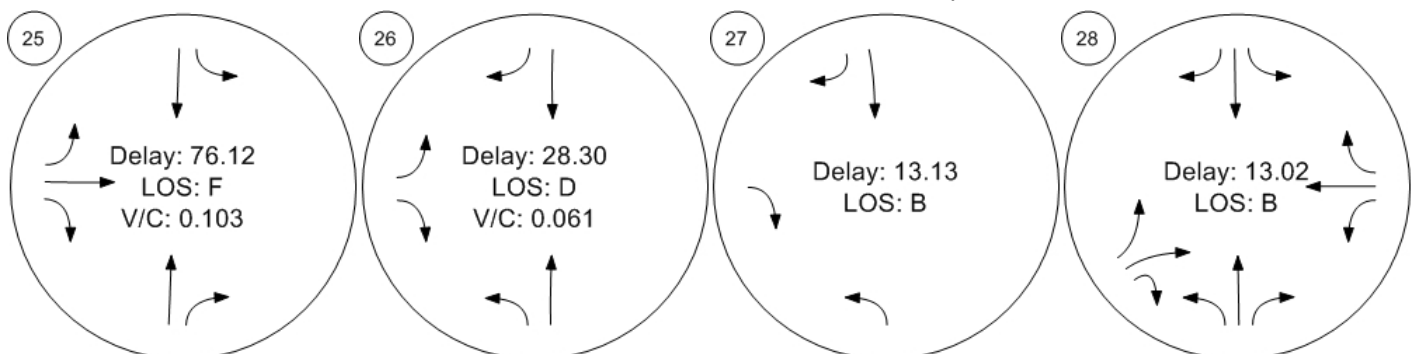
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

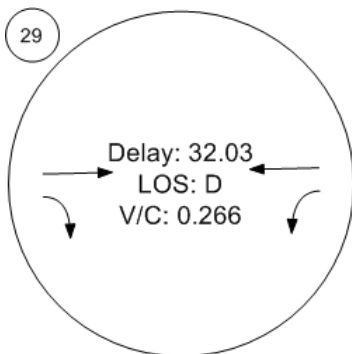


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExPM.pdf

Scenario 2: Ex PM
5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.556	18.7	B
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.652	25.2	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.088	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.264	31.2	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Left	0.849	65.4	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.253	31.5	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		10.3	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.6	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.447	74.4	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	466	0	360	528	0	58	0	0	594	0	291	852
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	466	0	360	528	0	58	0	0	594	0	291	852
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	0	90	132	0	15	0	0	149	0	73	213
Total Analysis Volume [veh/h]	466	0	360	528	0	58	0	0	594	0	291	852
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	0	56	0	56	0	0	75	0	19	15
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	19	19	43	19	82
g / C, Green / Cycle	0.44	0.44	0.22	0.22	0.47	0.21	0.91
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.15	0.04	0.17	0.16	0.54
s, saturation flow rate [veh/h]	1774	1601	3547	1583	3547	1863	1583
c, Capacity [veh/h]	776	700	766	342	1681	398	1443
d1, Uniform Delay [s]	18.76	19.05	32.53	28.74	14.97	33.01	0.38
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.77	3.40	1.12	0.23	0.13	2.60	1.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.57	0.69	0.17	0.35	0.73	0.59
d, Delay for Lane Group [s/veh]	21.52	22.45	33.65	28.97	15.10	35.62	2.17
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh]	6.83	6.65	5.31	1.03	3.70	6.08	0.71
50th-Percentile Queue Length [ft]	170.79	166.34	132.73	25.74	92.50	152.00	17.86
95th-Percentile Queue Length [veh]	11.12	10.88	9.09	1.85	6.66	10.12	1.29
95th-Percentile Queue Length [ft]	277.96	272.10	227.20	46.33	166.49	253.10	32.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.62	0.00	22.45	33.65	0.00	28.97	0.00	0.00	15.10	0.00	35.62	2.17
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	21.97			33.19			15.10			10.68		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.66											
Intersection LOS	B											
Intersection V/C	0.556											

Sequence




Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	441	40	136	48	73	39	186	902	62	101	557	682
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	441	40	136	48	73	39	186	902	62	101	557	682
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	10	34	12	18	10	47	226	16	25	139	171
Total Analysis Volume [veh/h]	441	40	136	48	73	39	186	902	62	101	557	682
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	15	0	10	19	0	29	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	5	58	47	47	7	48	48
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.52	0.52	0.07	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.14	0.13	0.09	0.03	0.04	0.02	0.29	0.25	0.04	0.06	0.30	0.43
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	635	3547	1583	1774	1863	1583
c, Capacity [veh/h]	295	297	263	107	112	95	361	1848	825	133	983	836
d1, Uniform Delay [s]	36.20	36.20	34.26	40.89	41.40	40.78	16.51	13.86	10.75	40.88	14.33	17.65
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.38	5.32	1.57	2.93	6.20	2.79	5.16	0.93	0.18	8.60	2.37	8.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

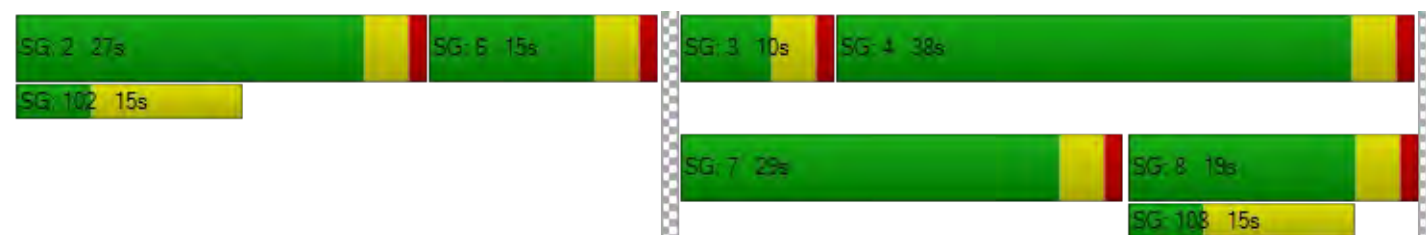
X, volume / capacity	0.81	0.81	0.52	0.45	0.65	0.41	0.51	0.49	0.08	0.76	0.57	0.82
d, Delay for Lane Group [s/veh]	41.58	41.52	35.83	43.82	47.60	43.57	21.67	14.78	10.93	49.48	16.70	26.31
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.42	5.46	2.79	1.10	1.76	0.90	1.79	5.73	0.63	2.49	7.72	12.68
50th-Percentile Queue Length [ft]	135.52	136.41	69.74	27.62	44.02	22.47	44.63	143.15	15.65	62.19	193.06	316.99
95th-Percentile Queue Length [veh]	9.24	9.29	5.02	1.99	3.17	1.62	3.21	9.65	1.13	4.48	12.28	18.52
95th-Percentile Queue Length [ft]	230.98	232.18	125.53	49.71	79.23	40.44	80.33	241.25	28.18	111.94	307.00	462.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.55	41.52	35.83	43.82	47.60	43.57	21.67	14.78	10.93	49.48	16.70	26.31
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	40.29			45.49			15.69			24.06		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	25.23											
Intersection LOS	C											
Intersection V/C	0.652											

Sequence



Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	674	90	74	123	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	674	90	74	123	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	169	23	19	31	0	0
Total Analysis Volume [veh/h]	674	90	74	123	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.67	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.18	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.63		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	31.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.264

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1031	0	0	279	49	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1031	0	0	279	49	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	258	0	0	70	12	21
Total Analysis Volume [veh/h]	1031	0	0	279	49	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.26	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	31.18	13.56
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.01	0.59
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	25.36	14.82
d_A, Approach Delay [s/veh]	0.00		0.00		20.05	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.85					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 65.4
 Level Of Service: F
 Volume to Capacity (v/c): 0.849

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	737	15	11	315	0	271	13	279	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	737	15	11	315	0	271	13	279	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	184	4	3	79	0	68	3	70	0	0	0
Total Analysis Volume [veh/h]	0	737	15	11	315	0	271	13	279	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.00	0.00	0.85	0.06	0.32	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.27	0.00	0.00	65.44	62.21	11.35	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.70	0.35	0.00	8.49	4.99	1.49	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	17.56	8.78	0.00	212.16	124.68	37.21	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.31			38.56			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	13.29											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	31.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.253

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	82	755	542	45	44	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	755	542	45	44	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	189	136	11	11	12
Total Analysis Volume [veh/h]	82	755	542	45	44	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	0.25	0.07
d_M, Delay for Movement [s/veh]	8.99	0.00	0.00	0.00	31.53	15.96
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	2.15	1.08	0.00	0.00	1.34	1.34
95th-Percentile Queue Length [ft]	53.86	26.93	0.00	0.00	33.41	33.41
d_A, Approach Delay [s/veh]	0.88		0.00		23.49	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.90					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

10.3
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	111	0	671	3	0	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	0	671	3	0	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	168	1	0	6
Total Analysis Volume [veh/h]	111	0	671	3	0	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.44	2.22	2.22	0.08
95th-Percentile Queue Length [ft]	11.05	55.61	55.49	1.91
Approach Delay [s/veh]	7.80	10.88		6.68
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.33			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.6
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	12	7	1	8	0	4	0	0	0	0
Total Analysis Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.16	0.18	
95th-Percentile Queue Length [ft]	4.69	4.12	4.55	
Approach Delay [s/veh]	7.63		7.47	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.64			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	78	0	2	32	0	14	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	2	32	0	14	9	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	1	8	0	4	2	12
Total Analysis Volume [veh/h]	78	0	2	32	0	14	9	49
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.45	0.10	0.18
95th-Percentile Queue Length [ft]	11.24	2.59	4.57
Approach Delay [s/veh]	7.84	7.48	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.64		
Intersection LOS	A		



Intersection Level Of Service Report

Intersection 29: US 101 SB On-ramp & Sunset

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 74.4
 Level Of Service: F
 Volume to Capacity (v/c): 0.447

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1950	335	40	1519
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1950	335	40	1519
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	488	84	10	380
Total Analysis Volume [veh/h]	0	0	1950	335	40	1519
Pedestrian Volume [ped/h]	0		0		0	

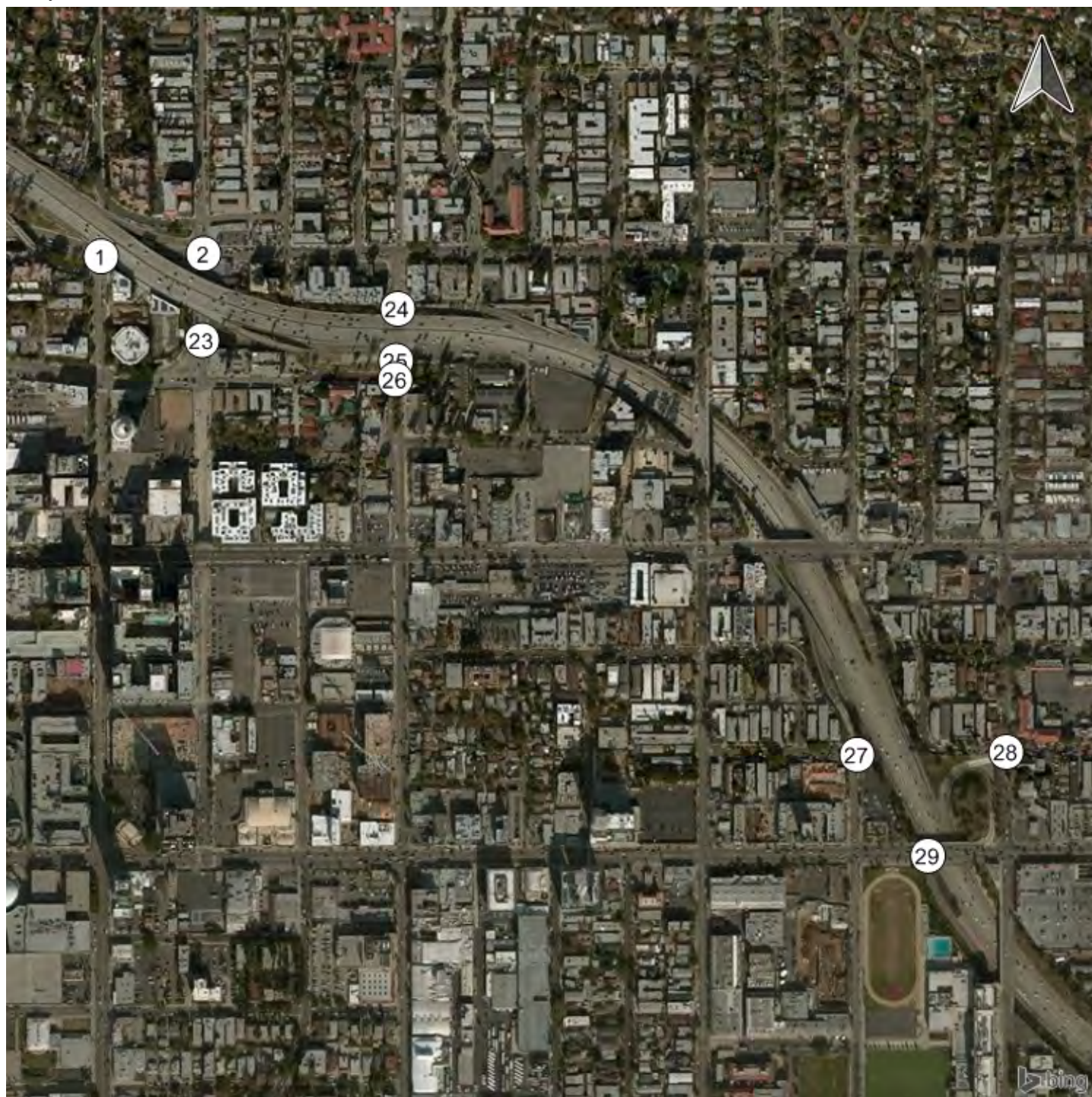
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.45	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	74.44	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.87	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	46.63	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.91	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.77					
Intersection LOS	F					

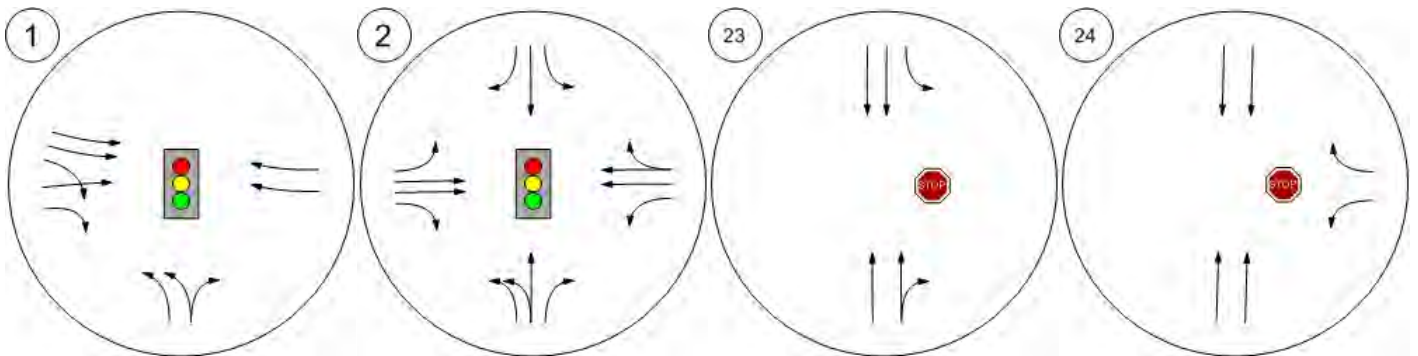
Study Intersections



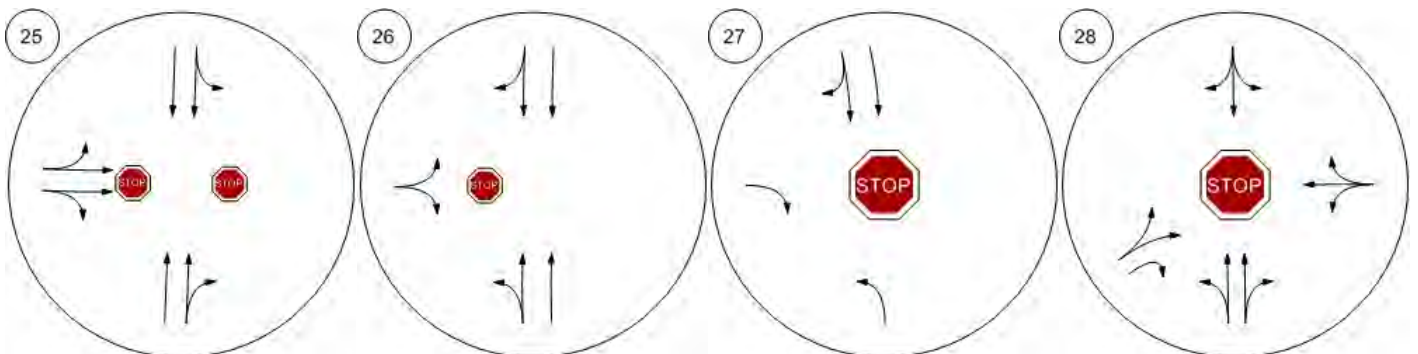
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ram



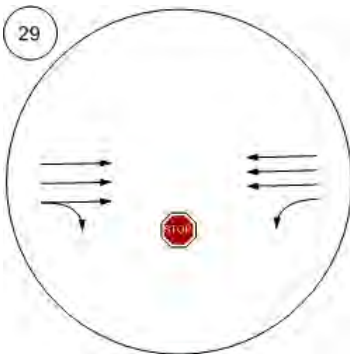
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



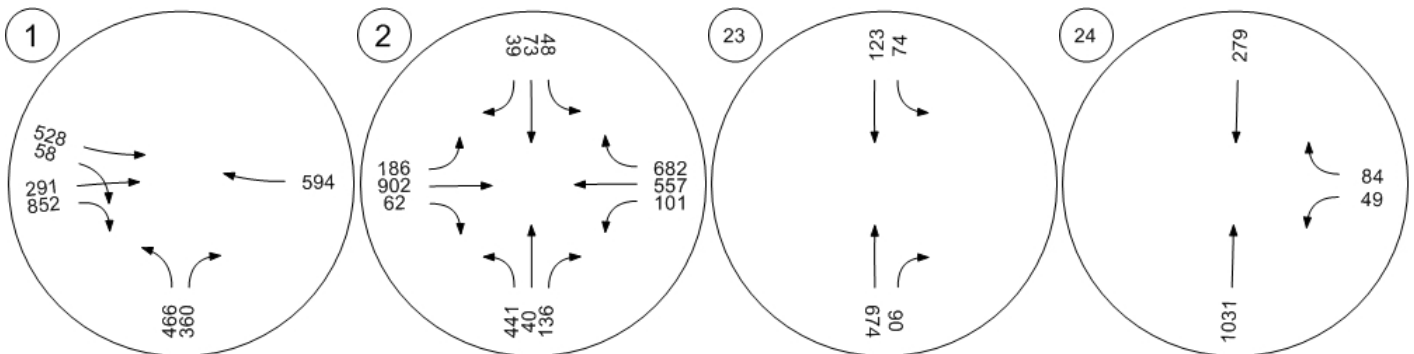
US 101 SB On-ramp & Suns



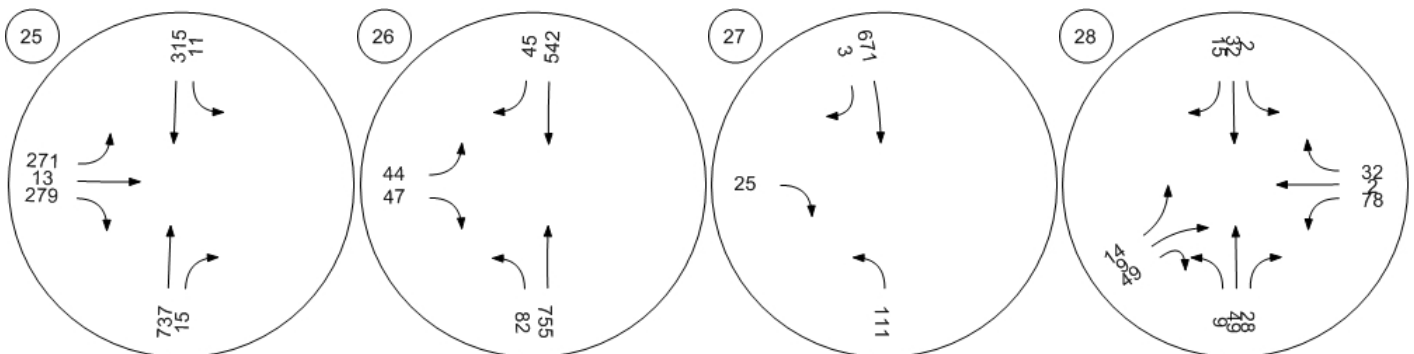
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



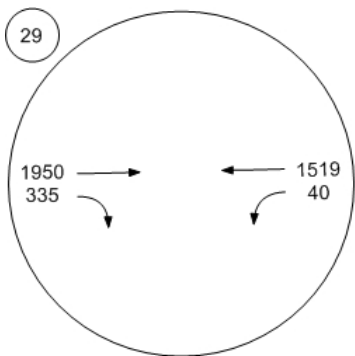
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Base Volume



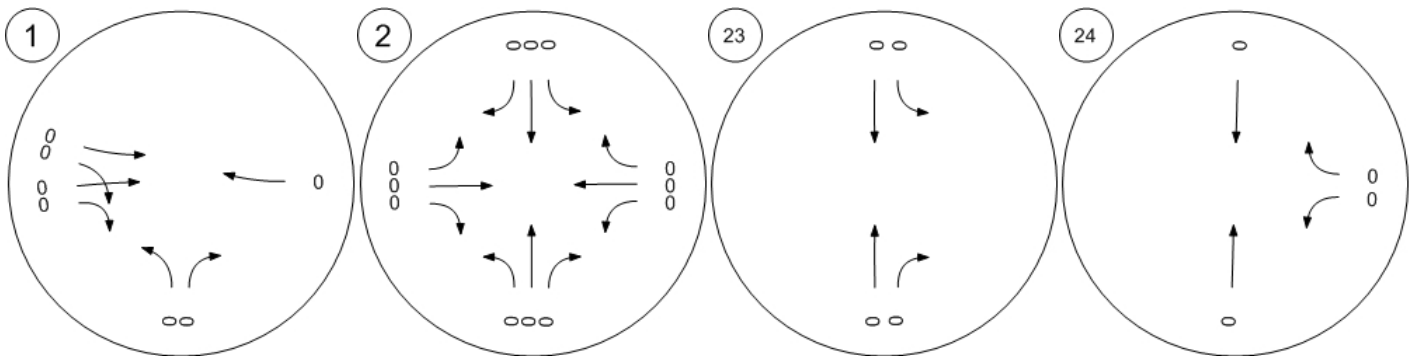
US 101 SB On-ramp & Suns



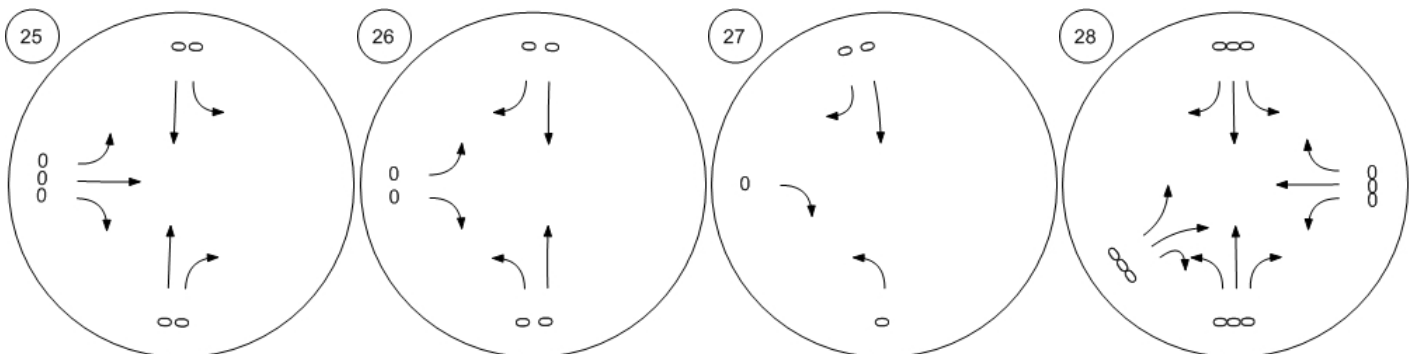
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



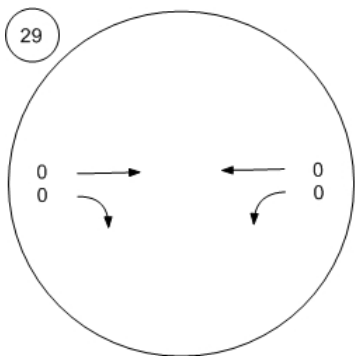
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



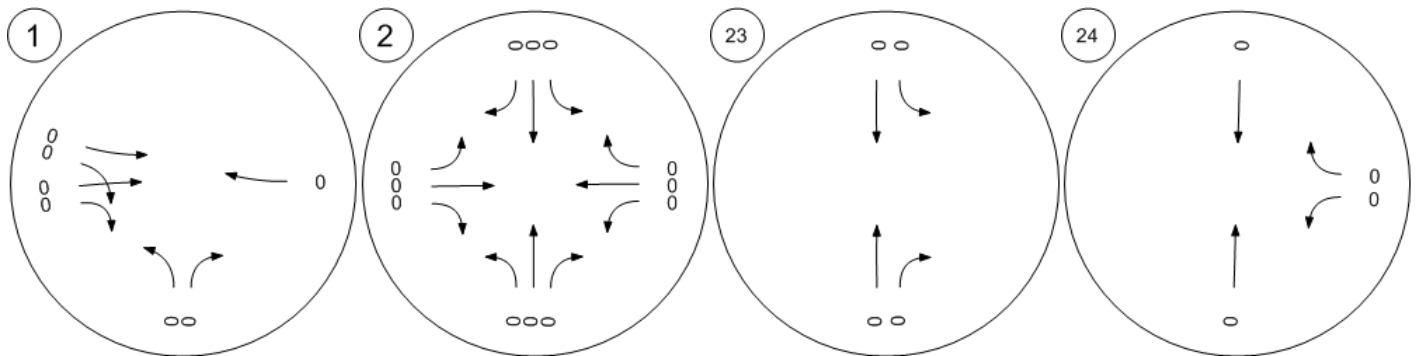
US 101 SB On-ramp & Suns



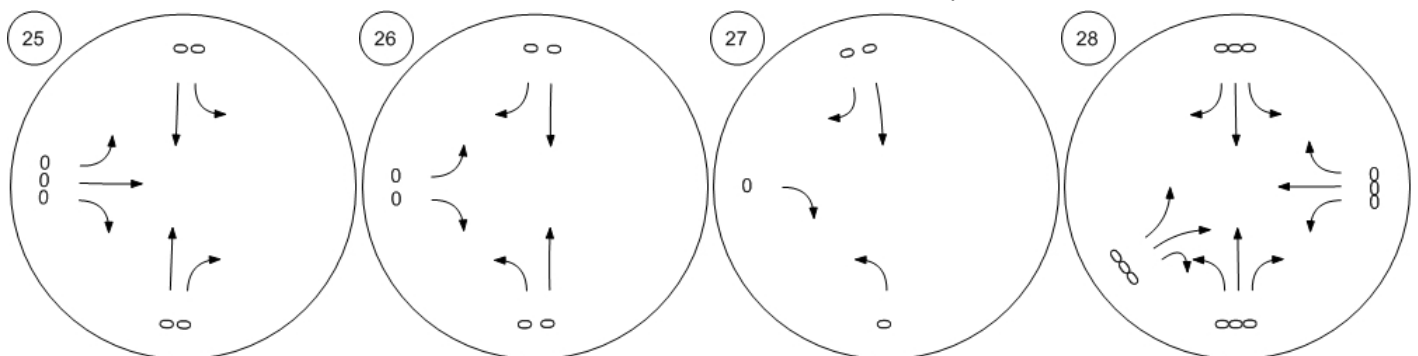
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



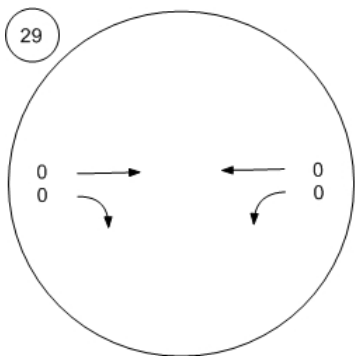
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



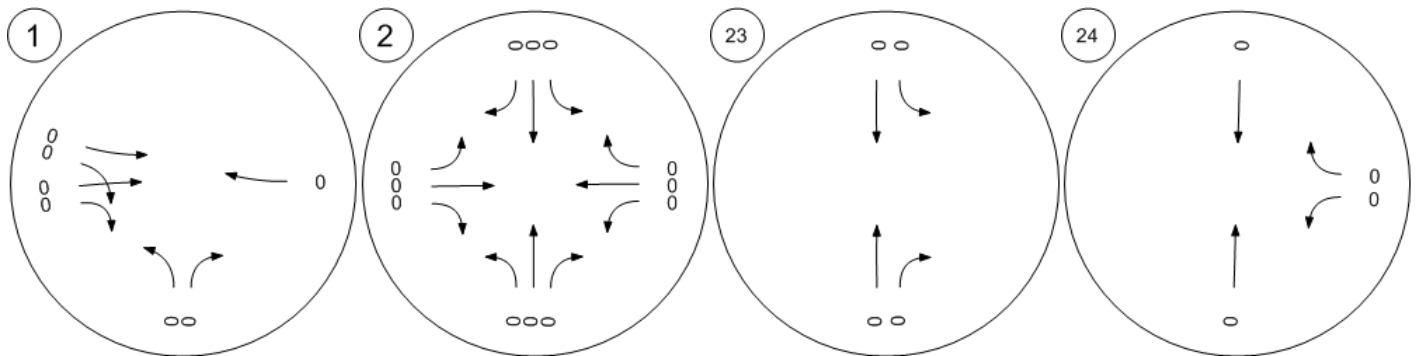
US 101 SB On-ramp & Suns



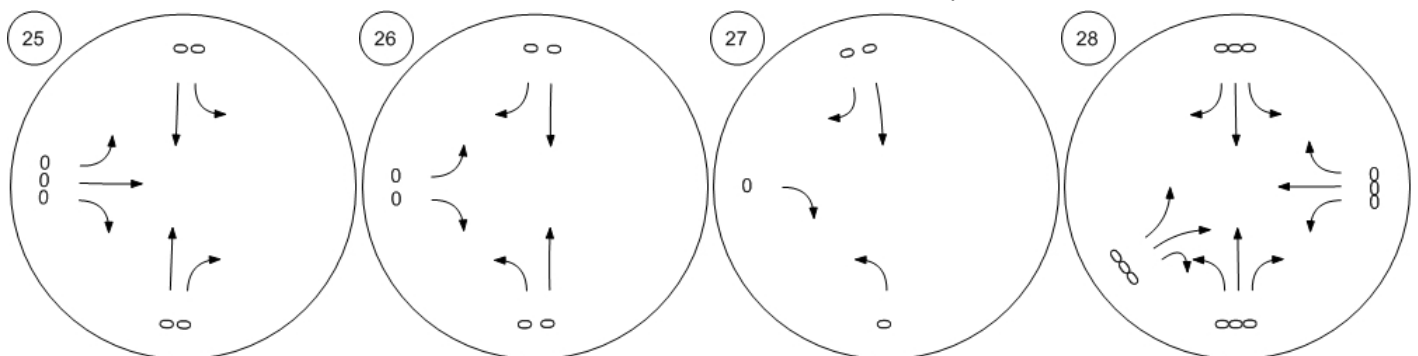
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



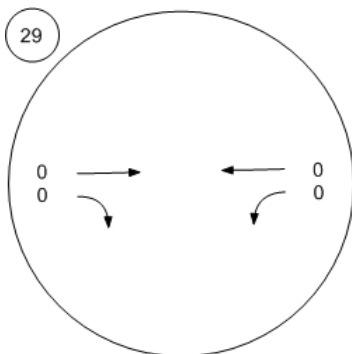
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



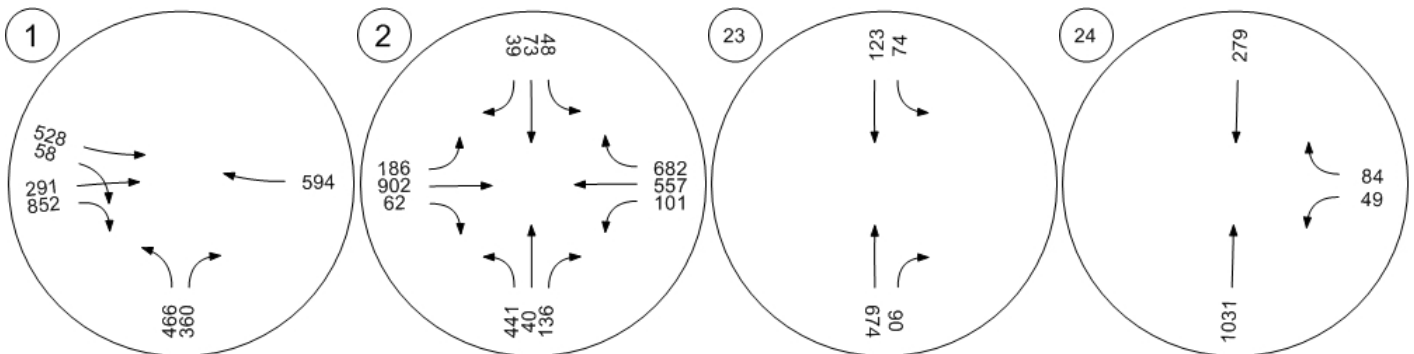
US 101 SB On-ramp & Suns



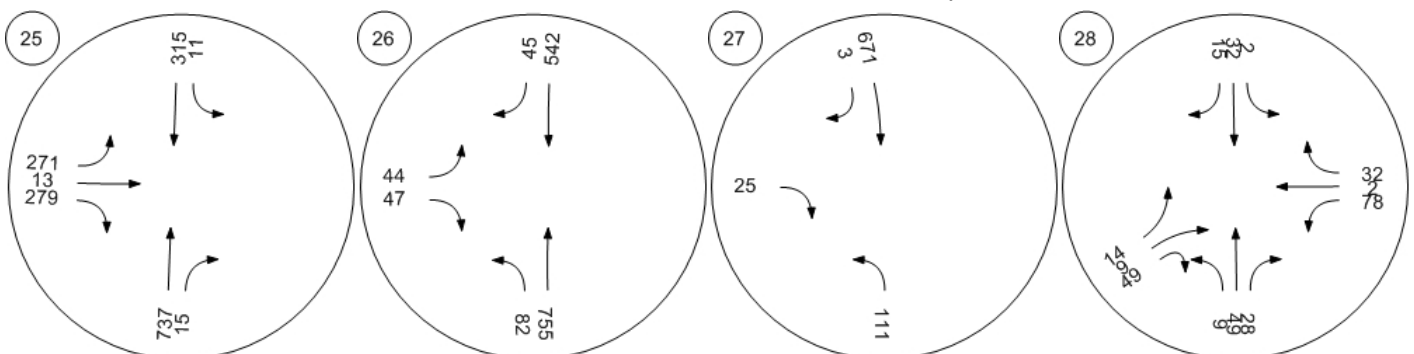
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ramp



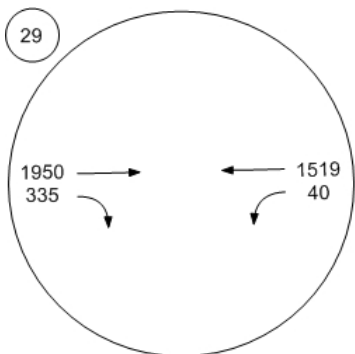
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



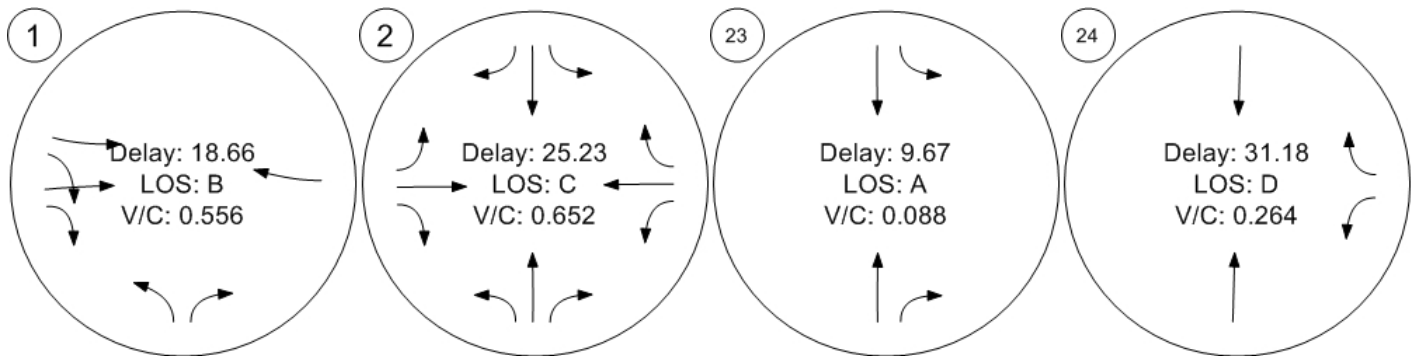
US 101 SB On-ramp & Suns



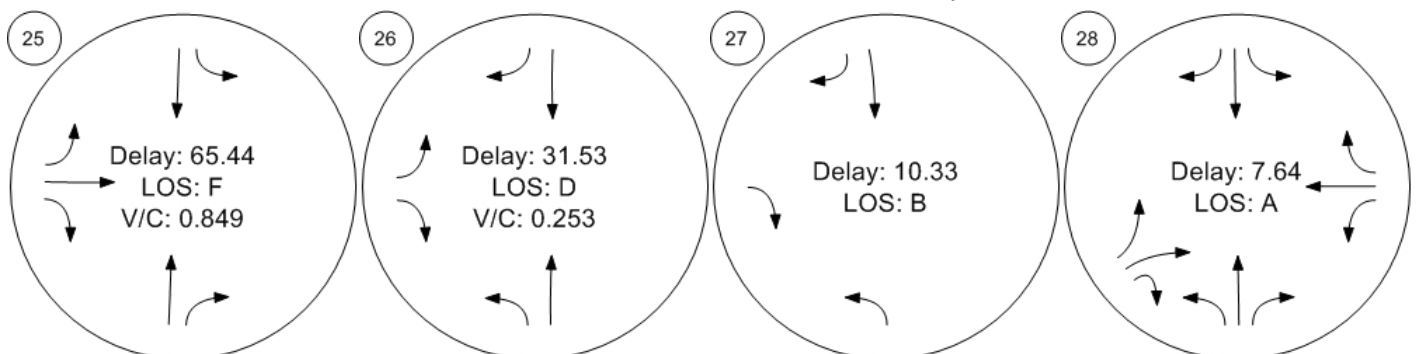
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

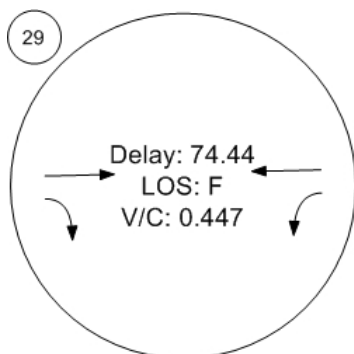


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExPAM.pdf

Scenario 3: ExP AM
5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.278	22.9	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.631	24.3	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.076	8.2	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.564	28.3	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.104	78.6	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.061	28.5	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		13.1	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		13.0	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.276	33.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 1: Vine & US 101 SB Off-ramp / Franklin**

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1454
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1454
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	61	97	0	11	0	0	226	0	33	364
Total Analysis Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1454
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	0	45	0	45	0	0	65	0	20	25
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	22	22	57	30	82
g / C, Green / Cycle	0.28	0.28	0.25	0.25	0.63	0.34	0.91
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.11	0.03	0.25	0.07	0.92
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	498	444	882	394	2236	628	1443
d1, Uniform Delay [s]	24.88	27.50	28.52	26.13	8.25	21.26	2.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.06	4.73	0.34	0.12	0.12	0.16	25.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.54	0.44	0.11	0.40	0.21	1.01
d, Delay for Lane Group [s/veh]	25.94	32.23	28.86	26.26	8.37	21.42	28.53
Lane Group LOS	C	C	C	C	A	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.97	4.90	3.50	0.73	3.88	1.94	10.27
50th-Percentile Queue Length [ft]	49.24	122.51	87.45	18.34	97.09	48.48	256.69
95th-Percentile Queue Length [veh]	3.55	8.53	6.30	1.32	6.99	3.49	15.63
95th-Percentile Queue Length [ft]	88.64	213.26	157.40	33.01	174.77	87.27	390.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.94	0.00	32.23	28.86	0.00	26.26	0.00	0.00	8.37	0.00	21.42	28.53
Movement LOS	C		C	C		C			A		C	F
d_A, Approach Delay [s/veh]	30.23			28.60			8.37			27.95		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	22.88											
Intersection LOS	C											
Intersection V/C	0.278											

Sequence




Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	232	21	36	72	117	66	187	429	104	138	857	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	232	21	36	72	117	66	187	429	104	138	857	663
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	5	9	18	29	17	47	107	26	35	214	166
Total Analysis Volume [veh/h]	232	21	36	72	117	66	187	429	104	138	857	663
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	20	0	36	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	9	8	8	8	62	49	49	9	52	52
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.09	0.68	0.54	0.54	0.10	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.02	0.04	0.06	0.04	0.36	0.12	0.07	0.08	0.42	0.45
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	520	3547	1583	1774	1863	1606
c, Capacity [veh/h]	169	171	151	156	164	139	349	1914	854	177	1074	926
d1, Uniform Delay [s]	39.72	39.71	37.75	39.11	40.03	39.15	16.76	10.88	10.23	39.62	14.04	14.84
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.35	6.28	0.80	2.13	5.72	2.50	5.77	0.27	0.29	7.24	4.49	6.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.74	0.24	0.46	0.72	0.47	0.54	0.22	0.12	0.78	0.74	0.79
d, Delay for Lane Group [s/veh]	46.07	45.99	38.56	41.23	45.75	41.65	22.54	11.15	10.52	46.86	18.53	21.64
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.98	3.00	0.76	1.59	2.75	1.47	1.61	2.17	1.03	3.30	11.87	12.05
50th-Percentile Queue Length [ft]	74.54	74.95	19.05	39.73	68.77	36.77	40.19	54.30	25.68	82.44	296.70	301.17
95th-Percentile Queue Length [veh]	5.37	5.40	1.37	2.86	4.95	2.65	2.89	3.91	1.85	5.94	17.52	17.74
95th-Percentile Queue Length [ft]	134.17	134.91	34.29	71.52	123.78	66.18	72.35	97.73	46.22	148.39	437.95	443.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.03	45.99	38.56	41.23	45.75	41.65	22.54	11.15	10.52	46.86	18.77	21.64
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	45.10			43.41			14.02			22.26		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	24.33											
Intersection LOS	C											
Intersection V/C	0.631											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	312	43	91	205	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	43	91	205	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	11	23	51	0	0
Total Analysis Volume [veh/h]	312	43	91	205	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.24	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.25	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	6.14	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.53		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	28.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	549	0	0	422	193	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	549	0	0	422	193	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	0	0	106	48	22
Total Analysis Volume [veh/h]	549	0	0	422	193	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.56	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	28.32	10.68
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	3.30	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	82.51	10.47
d_A, Approach Delay [s/veh]	0.00		0.00		22.75	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.12					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	78.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.104

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	348	29	24	588	0	214	24	554	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	348	29	24	588	0	214	24	554	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	87	7	6	147	0	54	6	139	0	0	0
Total Analysis Volume [veh/h]	0	348	29	24	588	0	214	24	554	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	0.81	0.10	0.79	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.12	0.00	0.00	76.57	78.63	26.46	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	D			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.04	0.52	0.00	8.12	7.99	7.87	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	26.07	13.03	0.00	202.98	199.81	196.64	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.32			41.58			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	18.60											
Intersection LOS	F											




Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 28.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.061

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	26	361	906	169	10	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	361	906	169	10	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	90	227	42	3	6
Total Analysis Volume [veh/h]	26	361	906	169	10	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.01	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	10.82	0.00	0.00	0.00	28.53	13.80
Movement LOS	B	A	A	A	D	B
95th-Percentile Queue Length [veh]	1.26	0.63	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	31.49	15.74	0.00	0.00	8.85	8.85
d_A, Approach Delay [s/veh]	0.73		0.00		18.40	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.58					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

13.1
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	34	0	882	41	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	0	882	41	0	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	221	10	0	6
Total Analysis Volume [veh/h]	34	0	882	41	0	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.12	3.92	3.82	0.07
95th-Percentile Queue Length [ft]	3.08	98.11	95.44	1.67
Approach Delay [s/veh]	7.35	13.51		6.49
Approach LOS	A	B		A
Intersection Delay [s/veh]	13.13			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 13.0
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	80	8	3	94	0	2	0	0	0	0
Total Analysis Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.22	1.17	3.67	
95th-Percentile Queue Length [ft]	30.46	29.33	91.83	
Approach Delay [s/veh]	10.76		15.20	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	13.02			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	173	0	5	70	0	60	22	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	0	5	70	0	60	22	259
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	0	1	18	0	15	6	65
Total Analysis Volume [veh/h]	173	0	5	70	0	60	22	259
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.89	0.59	2.31
95th-Percentile Queue Length [ft]	47.18	14.84	57.72
Approach Delay [s/veh]	12.44	13.33	
Approach LOS	B	B	
Intersection Delay [s/veh]	13.02		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	33.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.276

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1454	263	48	1961
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1454	263	48	1961
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	364	66	12	490
Total Analysis Volume [veh/h]	0	0	1454	263	48	1961
Pedestrian Volume [ped/h]	0		0		0	

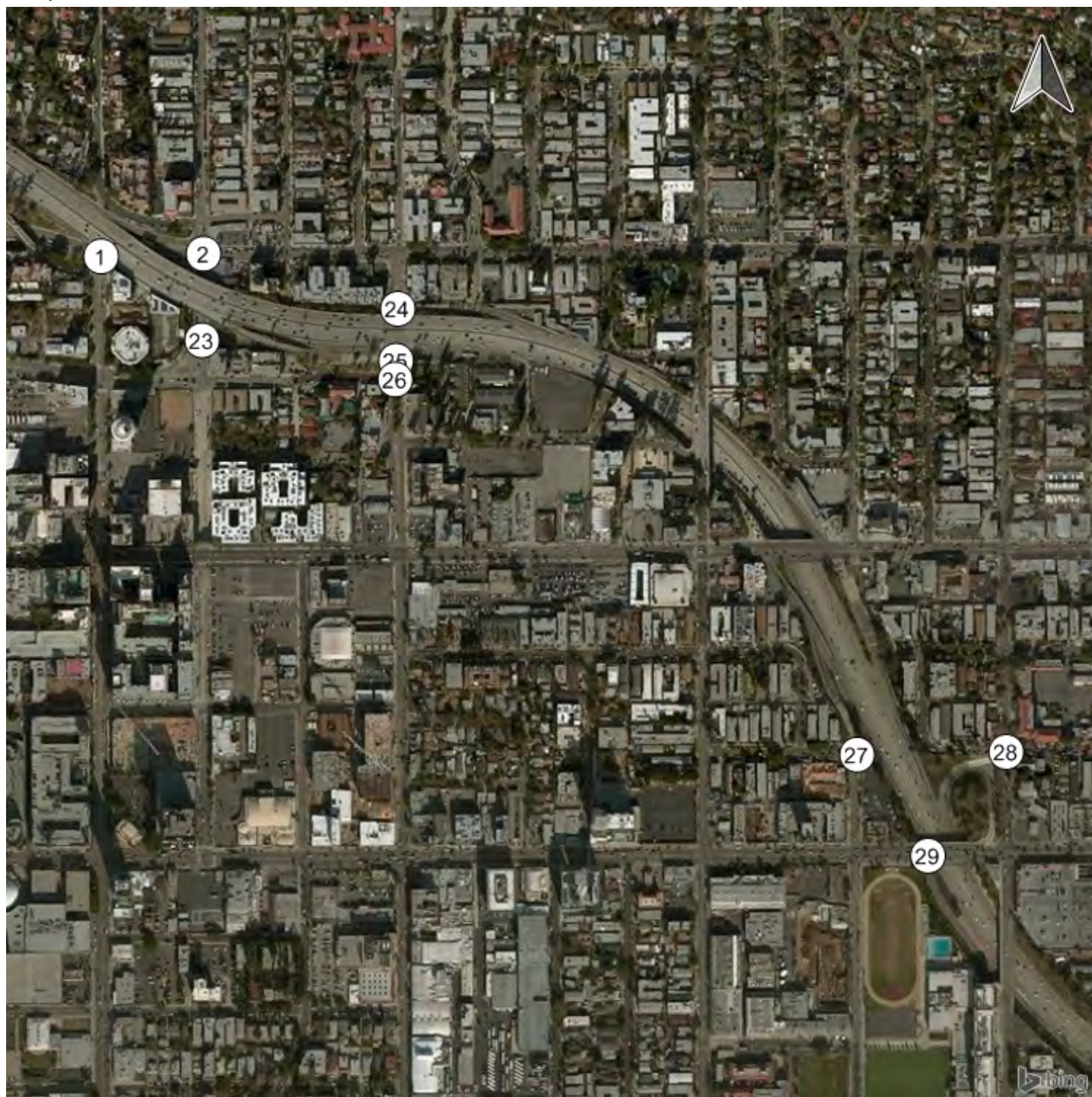
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.28	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	33.45	0.00
Movement LOS			A	A	D	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.07	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	26.81	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	D					

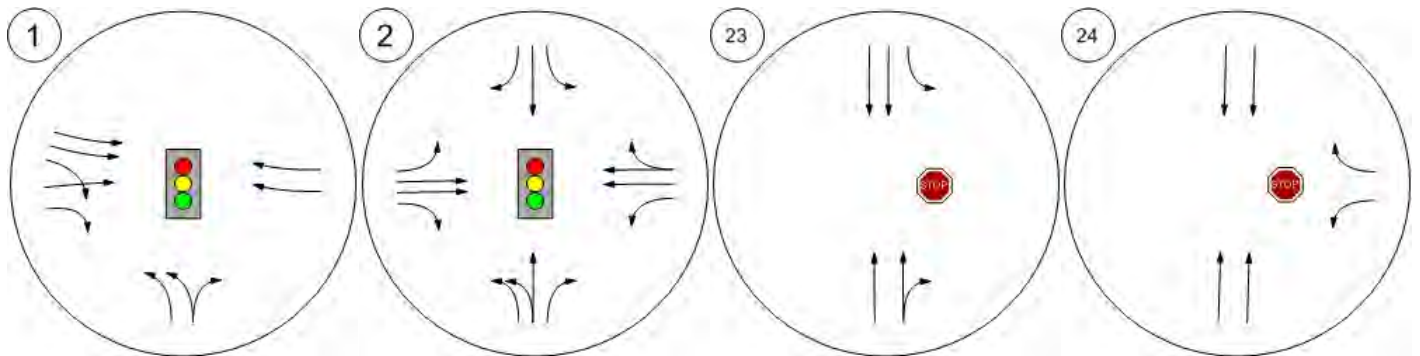
Study Intersections



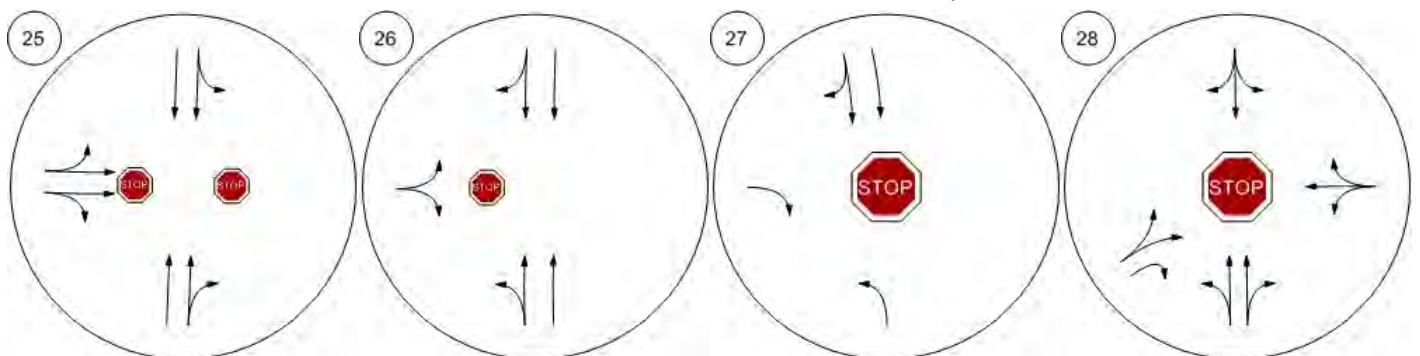
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ram



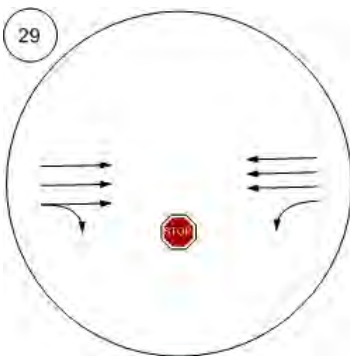
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



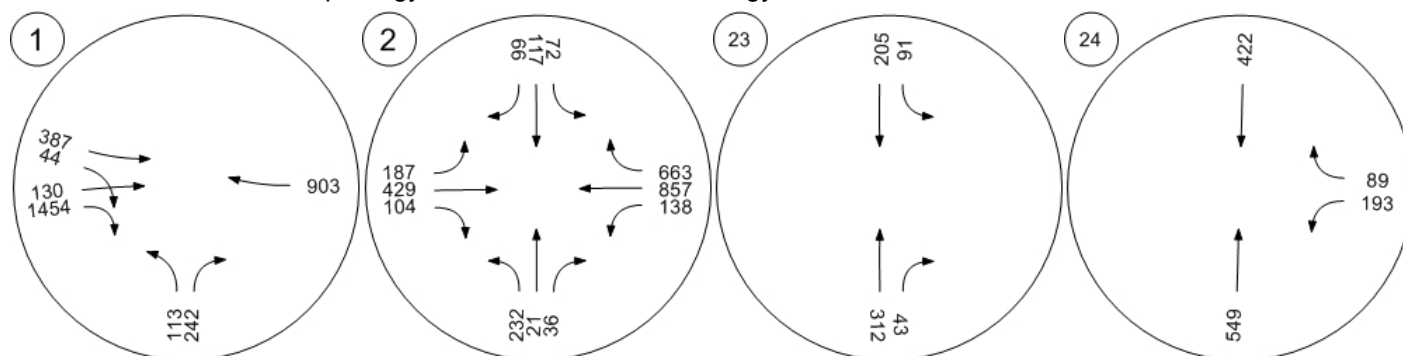
US 101 SB On-ramp & Suns



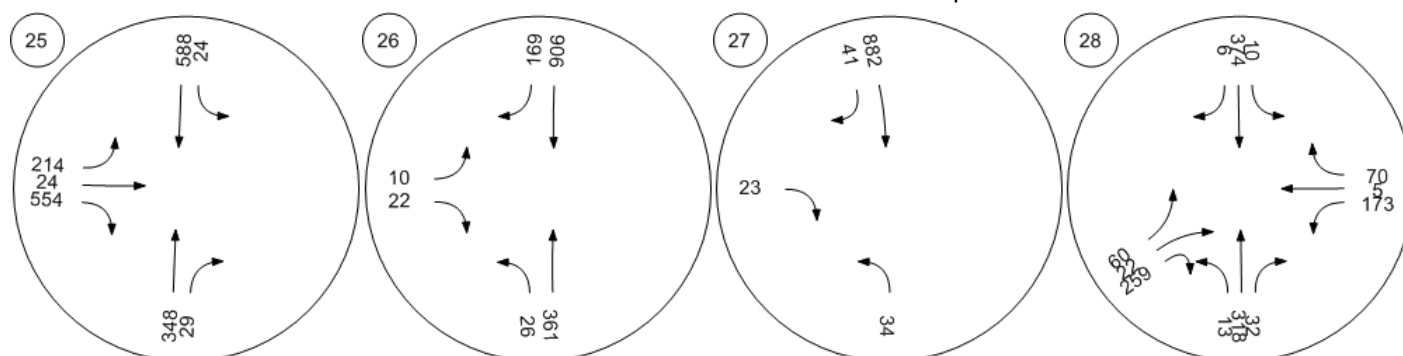
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



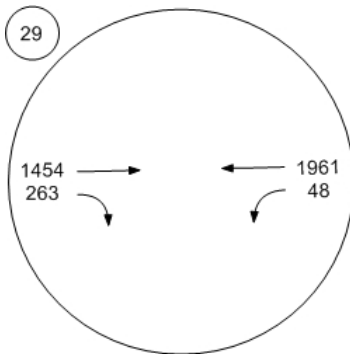
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Base Volume



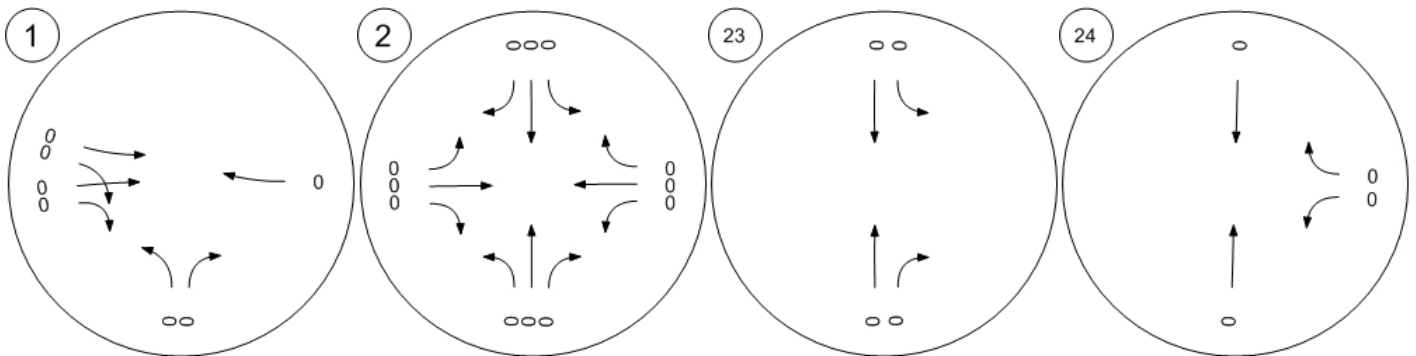
US 101 SB On-ramp & Suns



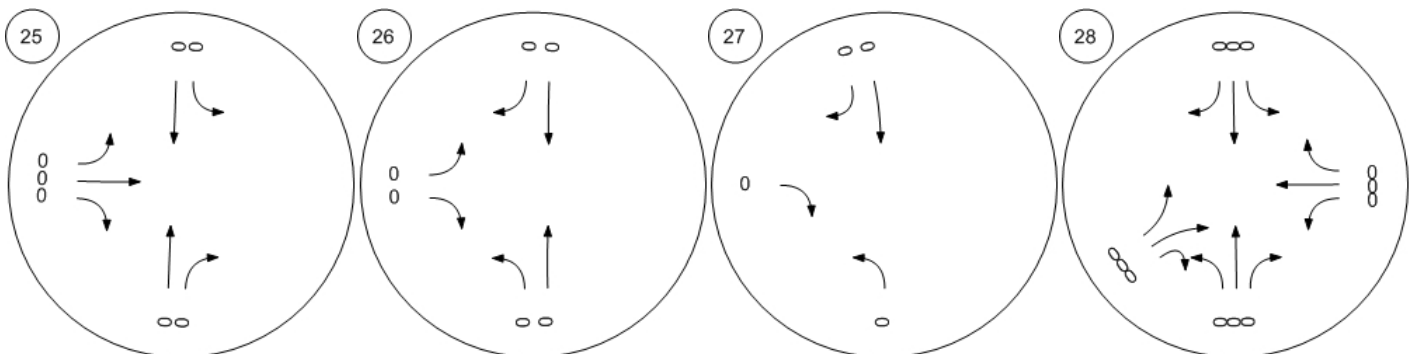
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



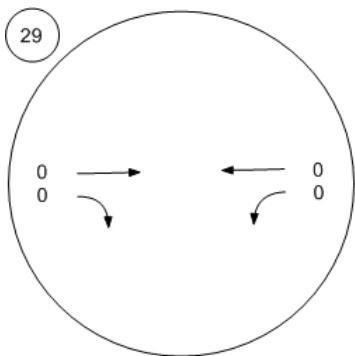
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



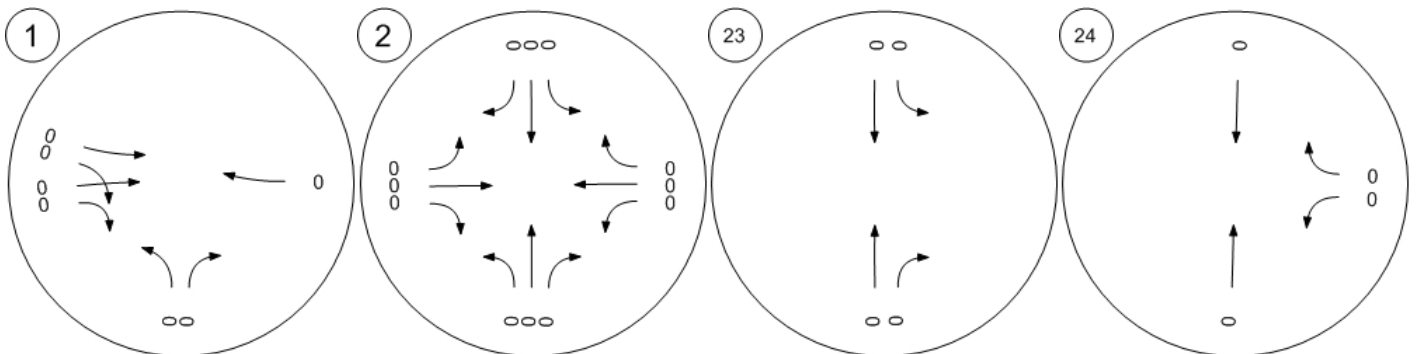
US 101 SB On-ramp & Suns



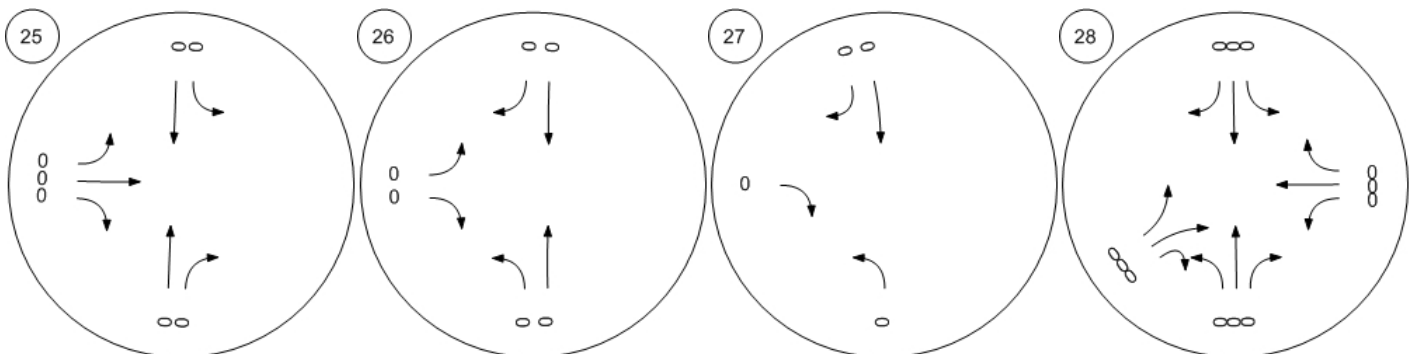
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



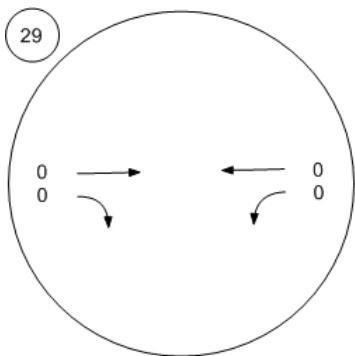
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



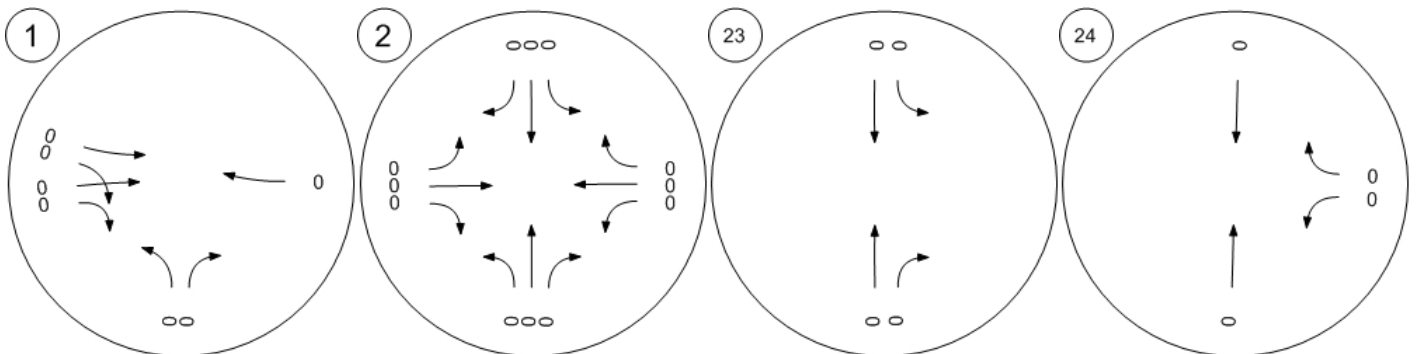
US 101 SB On-ramp & Suns



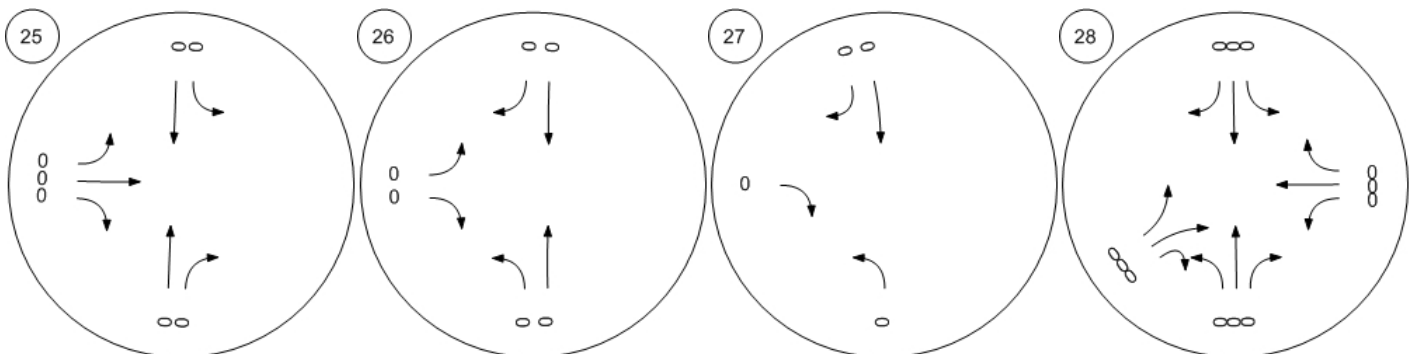
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



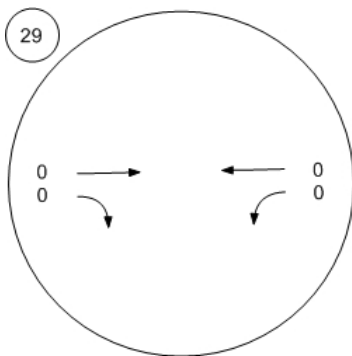
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



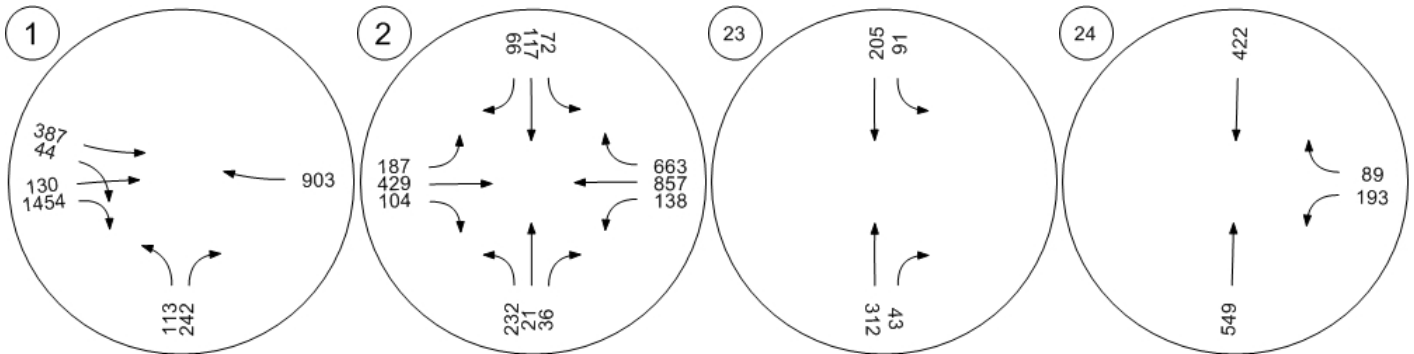
US 101 SB On-ramp & Suns



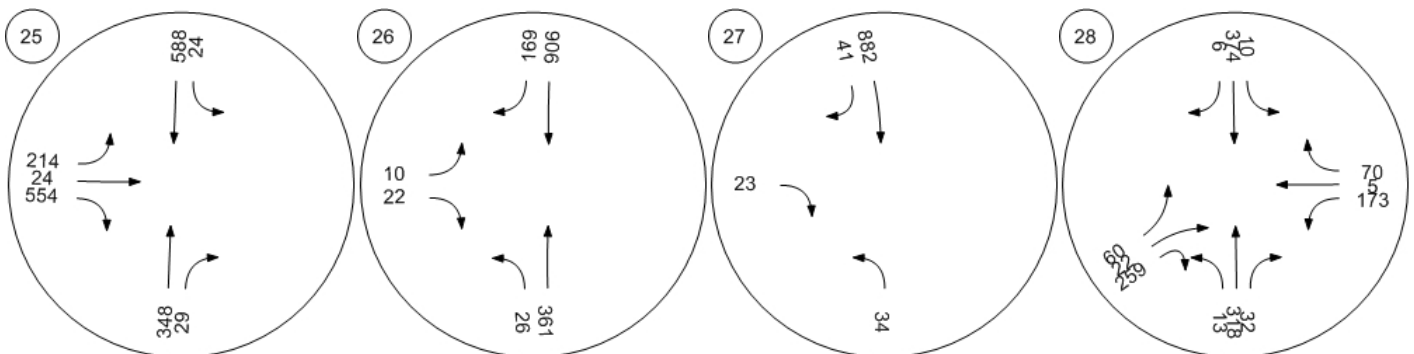
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



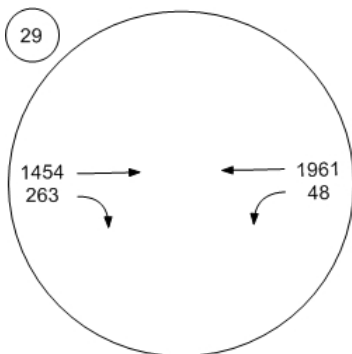
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



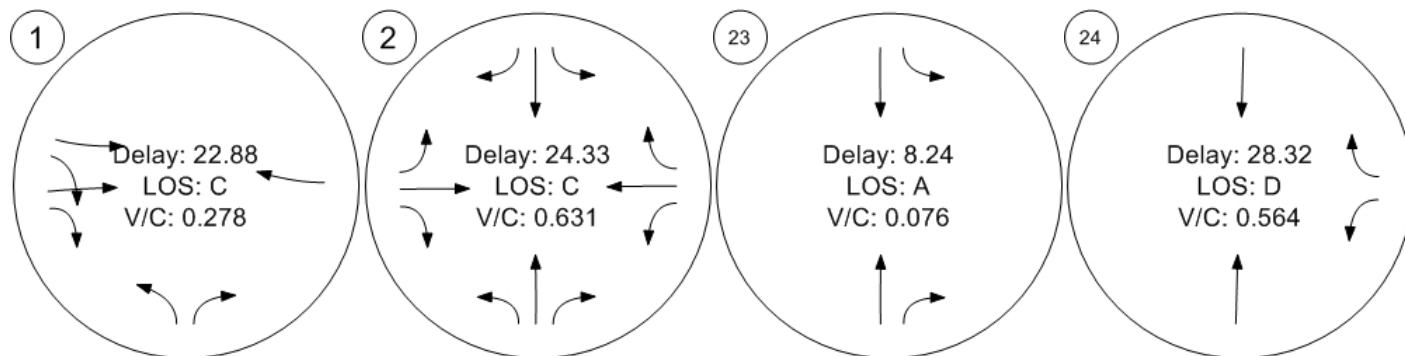
US 101 SB On-ramp & Suns



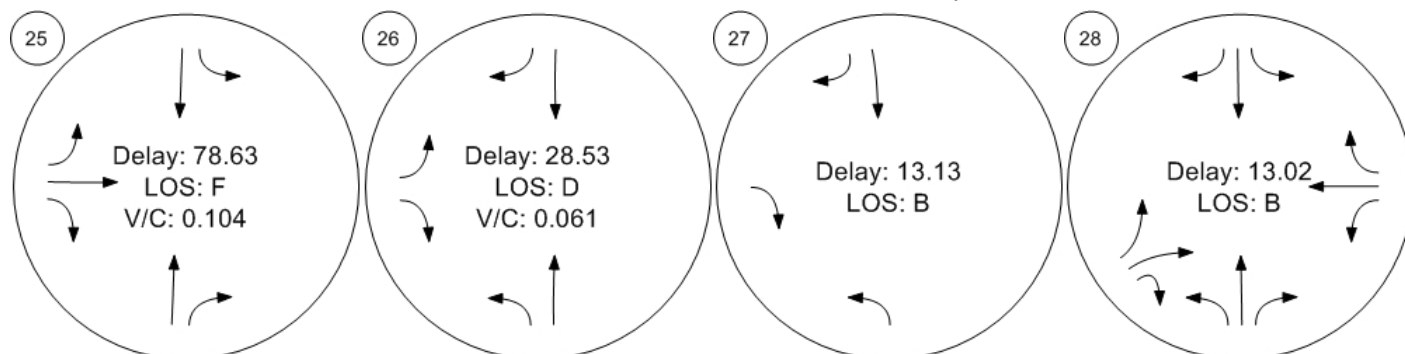
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

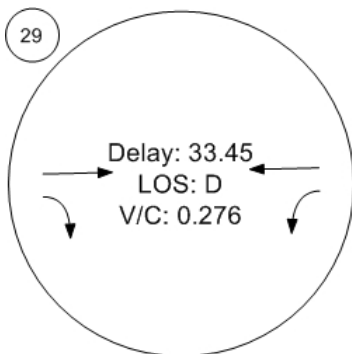


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\ExPPM.pdf

Scenario 4: ExP PM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.557	18.6	B
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.656	25.5	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.088	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.293	32.5	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Left	0.867	70.1	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.258	32.2	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		10.3	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.6	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.456	76.6	F



V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	0	90	133	0	15	0	0	149	0	73	218
Total Analysis Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	0	56	0	56	0	0	75	0	19	15
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	20	20	43	19	82
g / C, Green / Cycle	0.43	0.43	0.22	0.22	0.48	0.21	0.91
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.15	0.04	0.17	0.16	0.55
s, saturation flow rate [veh/h]	1774	1601	3547	1583	3547	1863	1583
c, Capacity [veh/h]	769	694	776	346	1695	400	1443
d1, Uniform Delay [s]	19.02	19.32	32.35	28.54	14.76	32.92	0.39
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.85	3.50	1.09	0.23	0.12	2.54	1.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.58	0.69	0.17	0.35	0.73	0.60
d, Delay for Lane Group [s/veh]	21.87	22.82	33.44	28.76	14.88	35.45	2.28
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	6.90	6.72	5.34	1.02	3.69	6.06	0.75
50th-Percentile Queue Length [ft]	172.48	168.03	133.59	25.62	92.16	151.61	18.84
95th-Percentile Queue Length [veh]	11.21	10.97	9.13	1.84	6.64	10.10	1.36
95th-Percentile Queue Length [ft]	280.17	274.32	228.37	46.12	165.88	252.58	33.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.97	0.00	22.82	33.44	0.00	28.76	0.00	0.00	14.88	0.00	35.45	2.28
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	22.33			32.98			14.88			10.58		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.62											
Intersection LOS	B											
Intersection V/C	0.557											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	452	40	136	48	73	39	186	902	67	101	557	682
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	452	40	136	48	73	39	186	902	67	101	557	682
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	10	34	12	18	10	47	226	17	25	139	171
Total Analysis Volume [veh/h]	452	40	136	48	73	39	186	902	67	101	557	682
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	15	0	10	19	0	29	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	5	57	47	47	7	47	47
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.52	0.52	0.07	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.14	0.14	0.09	0.03	0.04	0.02	0.29	0.25	0.04	0.06	0.30	0.43
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	636	3547	1583	1774	1863	1583
c, Capacity [veh/h]	300	303	268	107	112	95	359	1837	820	133	977	830
d1, Uniform Delay [s]	36.07	36.06	34.00	40.89	41.41	40.79	16.69	14.03	10.93	40.88	14.54	17.90
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.40	5.34	1.48	2.93	6.21	2.79	5.25	0.94	0.20	8.60	2.42	8.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

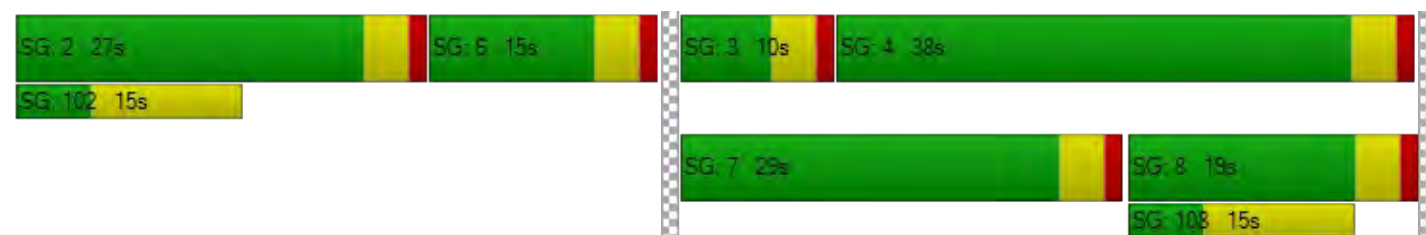
X, volume / capacity	0.82	0.82	0.51	0.45	0.65	0.41	0.52	0.49	0.08	0.76	0.57	0.82
d, Delay for Lane Group [s/veh]	41.46	41.40	35.49	43.82	47.62	43.58	21.93	14.98	11.12	49.48	16.95	26.87
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.54	5.58	2.77	1.10	1.76	0.90	1.81	5.77	0.68	2.49	7.80	12.84
50th-Percentile Queue Length [ft]	138.54	139.41	69.35	27.62	44.02	22.47	45.17	144.37	17.12	62.19	194.97	320.99
95th-Percentile Queue Length [veh]	9.40	9.45	4.99	1.99	3.17	1.62	3.25	9.72	1.23	4.48	12.38	18.72
95th-Percentile Queue Length [ft]	235.06	236.23	124.82	49.72	79.24	40.45	81.31	242.89	30.81	111.94	309.46	467.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.44	41.40	35.49	43.82	47.62	43.58	21.93	14.98	11.12	49.48	16.95	26.87
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	40.15			45.49			15.87			24.45		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	25.46											
Intersection LOS	C											
Intersection V/C	0.656											

Sequence



Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	684	90	74	128	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	684	90	74	128	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	171	23	19	32	0	0
Total Analysis Volume [veh/h]	684	90	74	128	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.72	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.25	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.56		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	32.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.293

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1034	0	0	285	54	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1034	0	0	285	54	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	259	0	0	71	14	21
Total Analysis Volume [veh/h]	1034	0	0	285	54	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.29	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	32.47	13.58
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.16	0.59
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	29.05	14.86
d_A, Approach Delay [s/veh]	0.00		0.00		20.97	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	70.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	185	4	3	82	0	68	3	70	0	0	0
Total Analysis Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.00	0.00	0.87	0.06	0.33	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.28	0.00	0.00	70.09	66.12	11.43	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.73	0.37	0.00	8.82	5.16	1.51	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	18.35	9.18	0.00	220.52	129.10	37.67	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.30			40.93			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	13.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	32.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.258

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	82	758	553	45	44	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	758	553	45	44	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	190	138	11	11	12
Total Analysis Volume [veh/h]	82	758	553	45	44	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	0.26	0.07
d_M, Delay for Movement [s/veh]	9.03	0.00	0.00	0.00	32.23	16.26
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	2.20	1.10	0.00	0.00	1.37	1.37
95th-Percentile Queue Length [ft]	55.03	27.52	0.00	0.00	34.24	34.24
d_A, Approach Delay [s/veh]	0.88		0.00		23.99	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

10.3
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	111	0	671	3	0	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	0	671	3	0	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	168	1	0	6
Total Analysis Volume [veh/h]	111	0	671	3	0	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.44	2.22	2.22	0.08
95th-Percentile Queue Length [ft]	11.05	55.61	55.49	1.91
Approach Delay [s/veh]	7.80	10.88		6.68
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.33			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.6
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	12	7	1	8	0	4	0	0	0	0
Total Analysis Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.16	0.18	
95th-Percentile Queue Length [ft]	4.69	4.12	4.55	
Approach Delay [s/veh]	7.63		7.47	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.64			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	78	0	2	32	0	14	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	2	32	0	14	9	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	1	8	0	4	2	12
Total Analysis Volume [veh/h]	78	0	2	32	0	14	9	49
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.45	0.10	0.18
95th-Percentile Queue Length [ft]	11.24	2.59	4.57
Approach Delay [s/veh]	7.84	7.48	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.64		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	76.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1953	348	40	1541
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1953	348	40	1541
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	488	87	10	385
Total Analysis Volume [veh/h]	0	0	1953	348	40	1541
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.46	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	76.61	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.91	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	47.64	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.94	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	F					

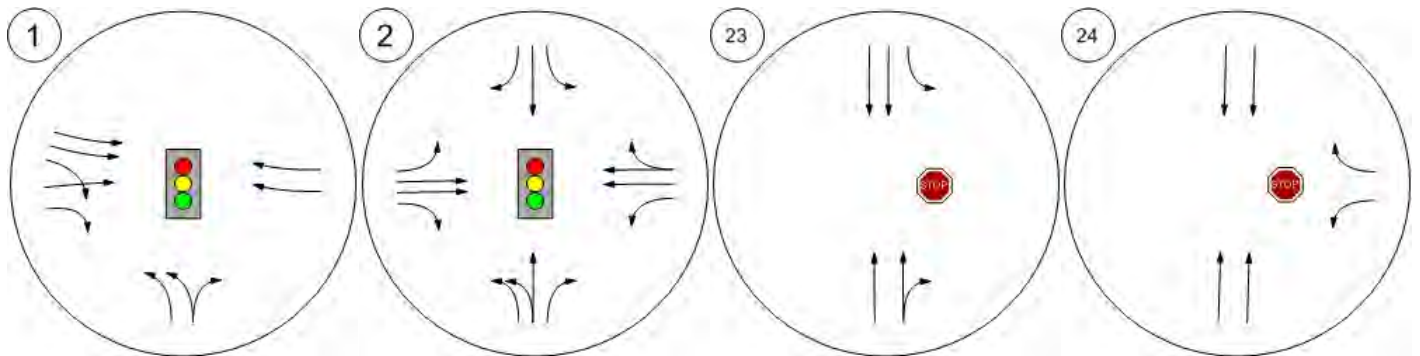
Study Intersections



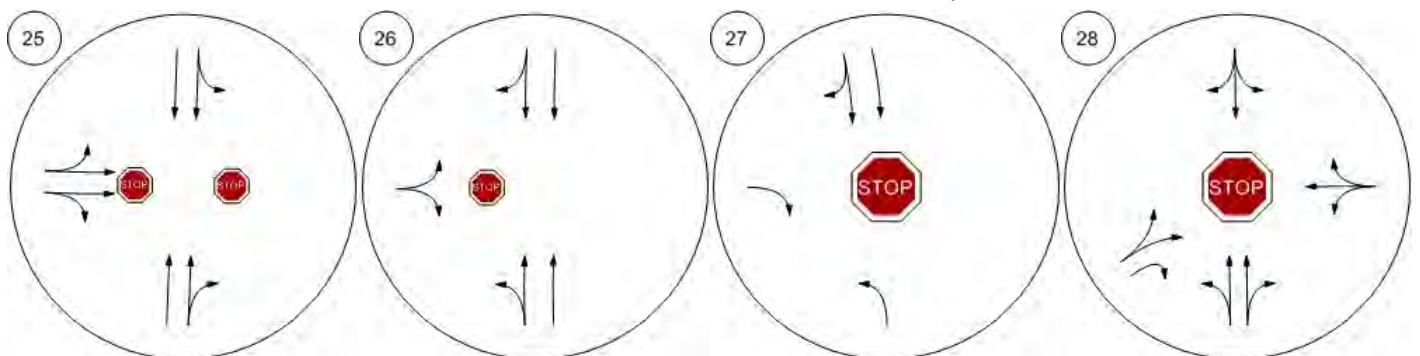
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



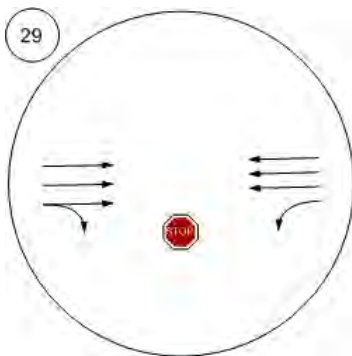
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



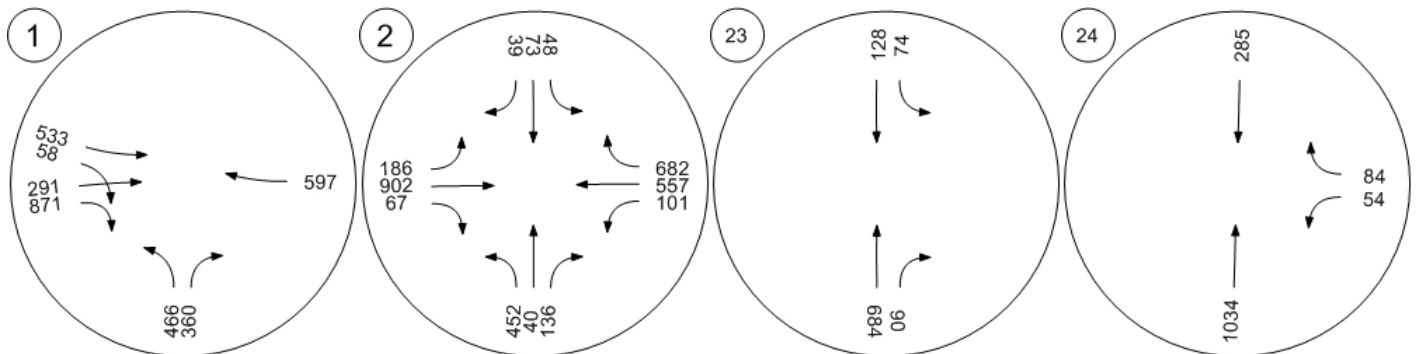
US 101 SB On-ramp & Suns



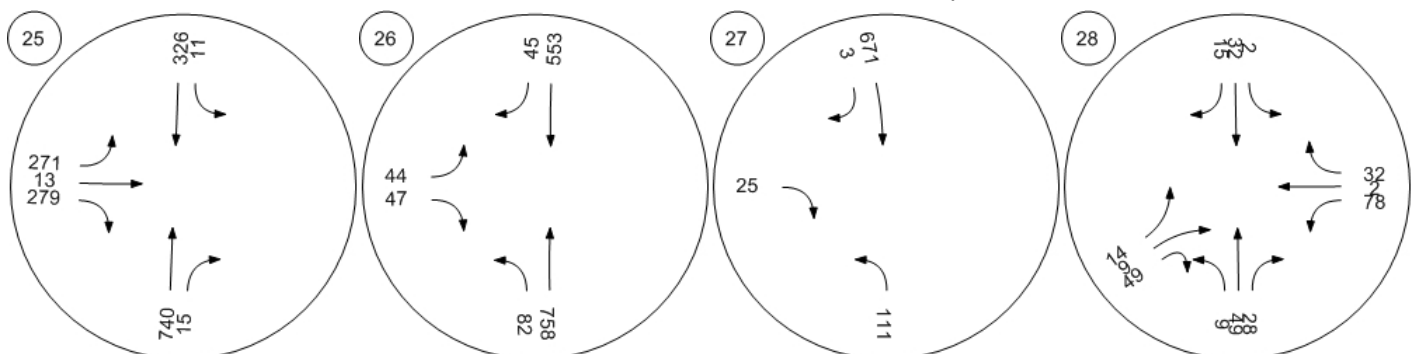
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



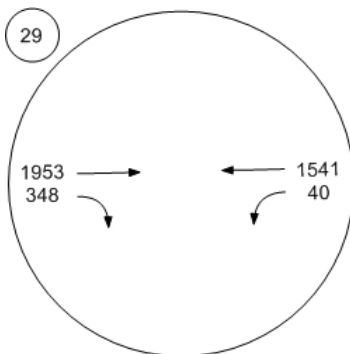
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Base Volume



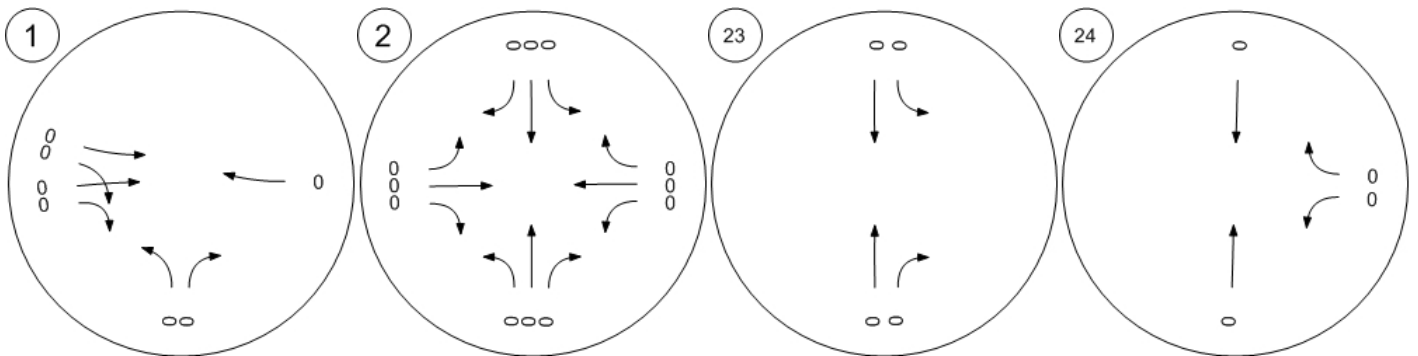
US 101 SB On-ramp & Suns



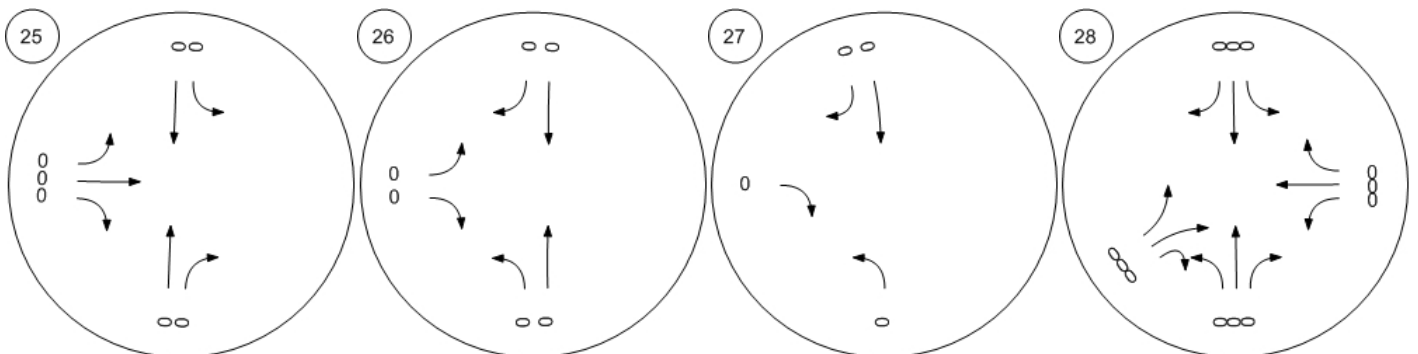
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



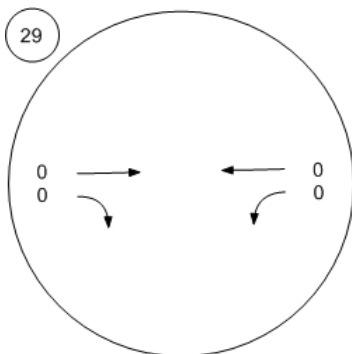
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



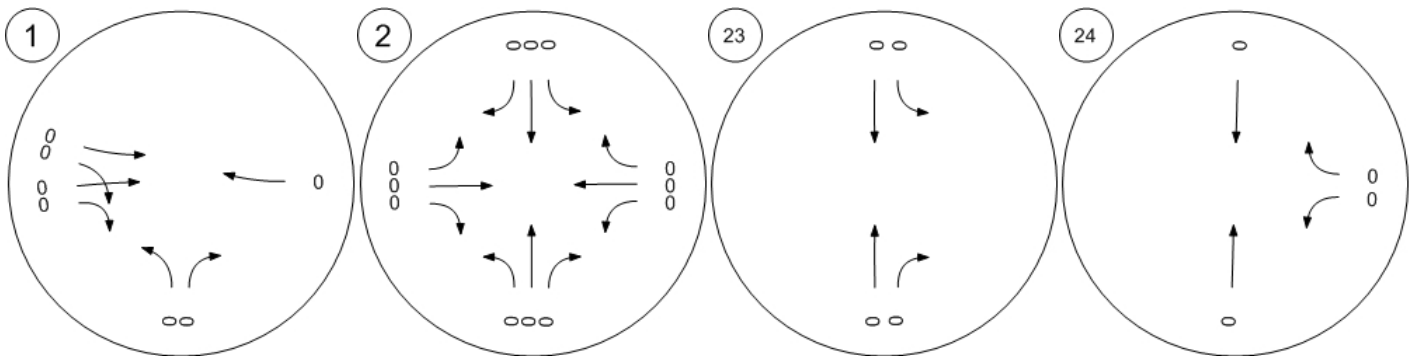
US 101 SB On-ramp & Suns



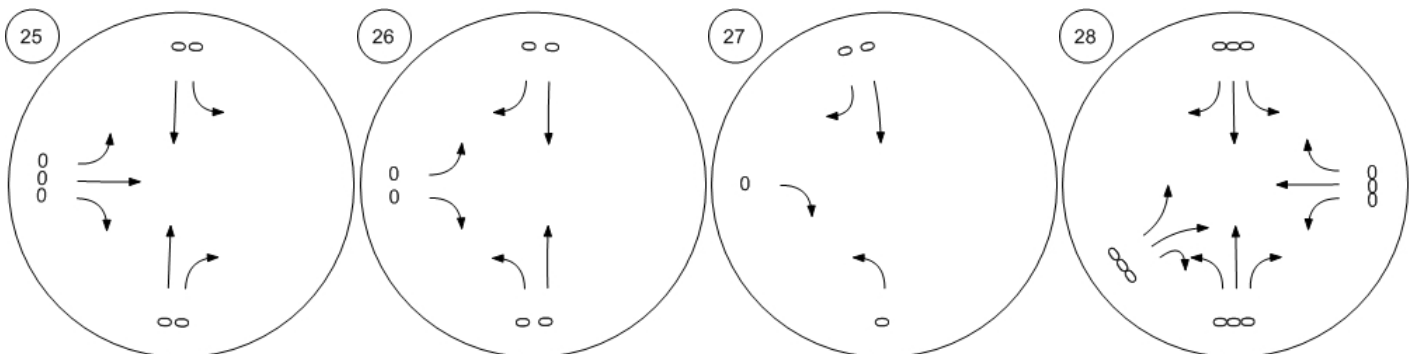
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



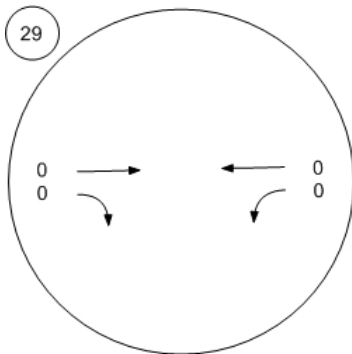
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



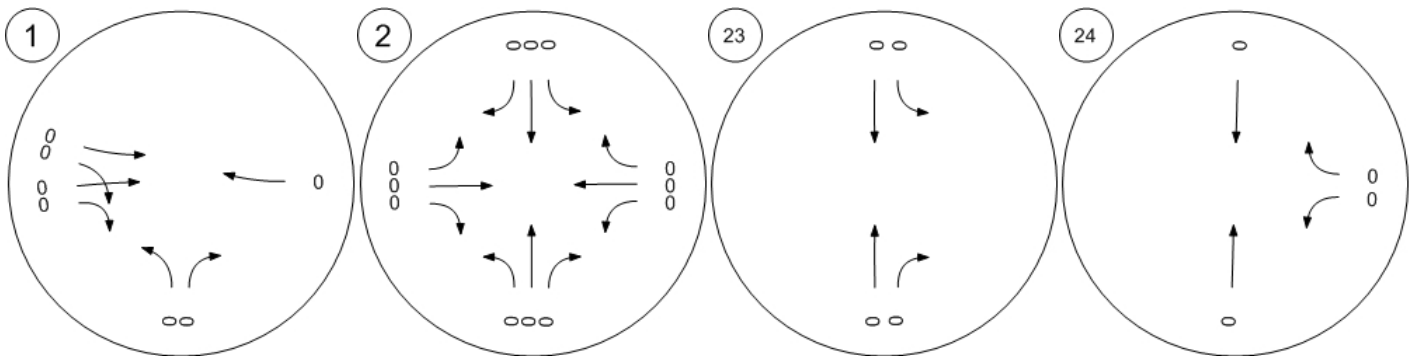
US 101 SB On-ramp & Suns



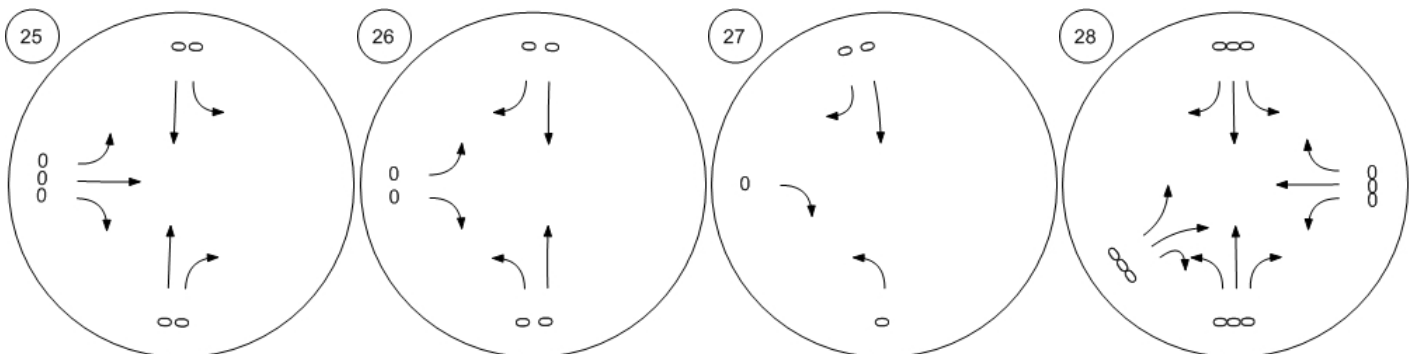
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



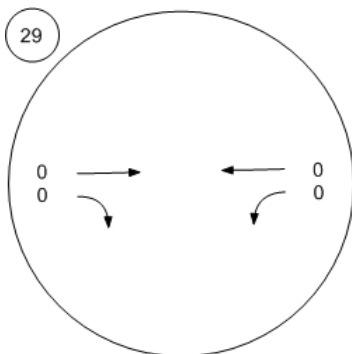
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



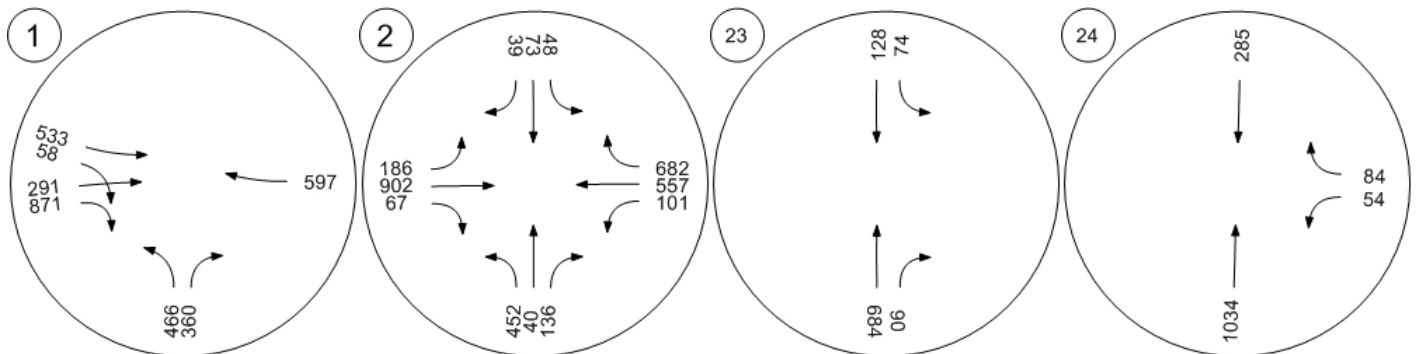
US 101 SB On-ramp & Suns



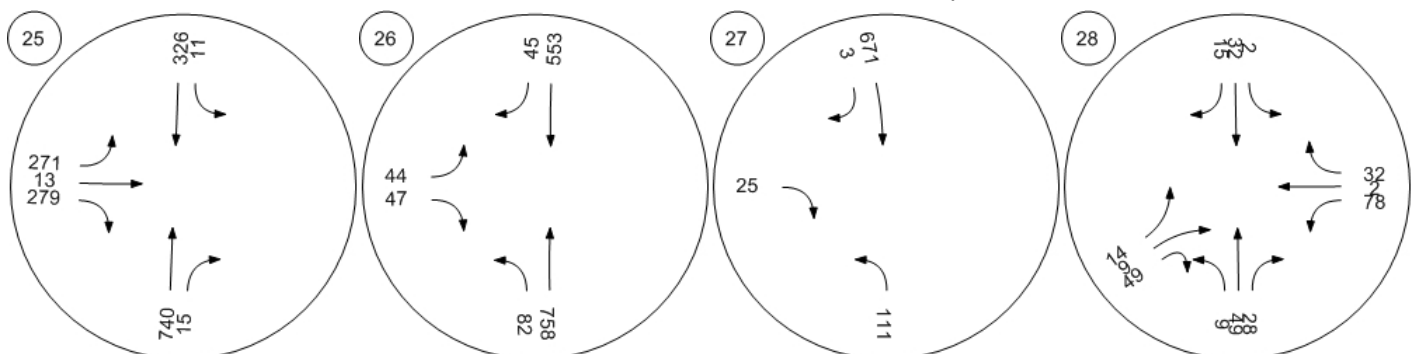
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



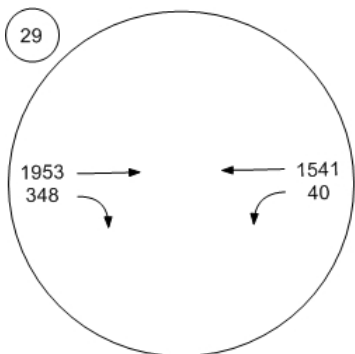
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



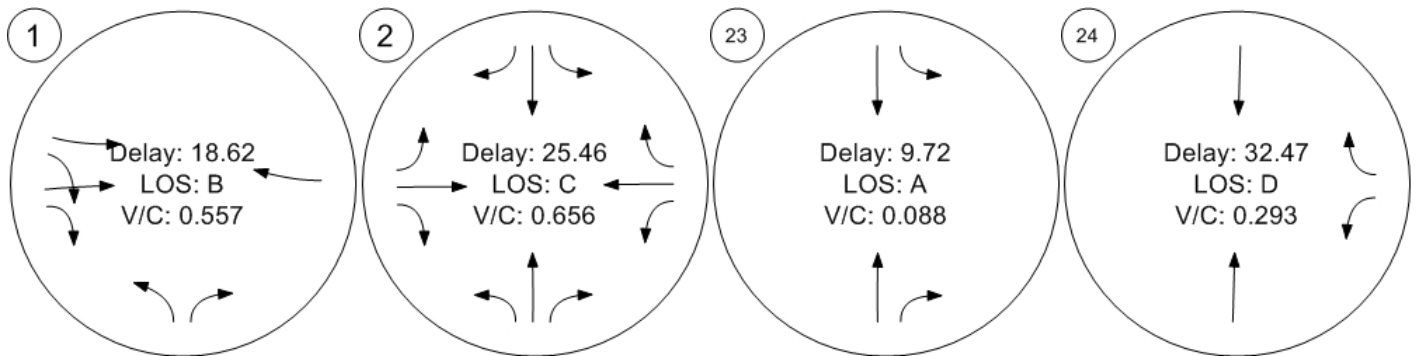
US 101 SB On-ramp & Suns



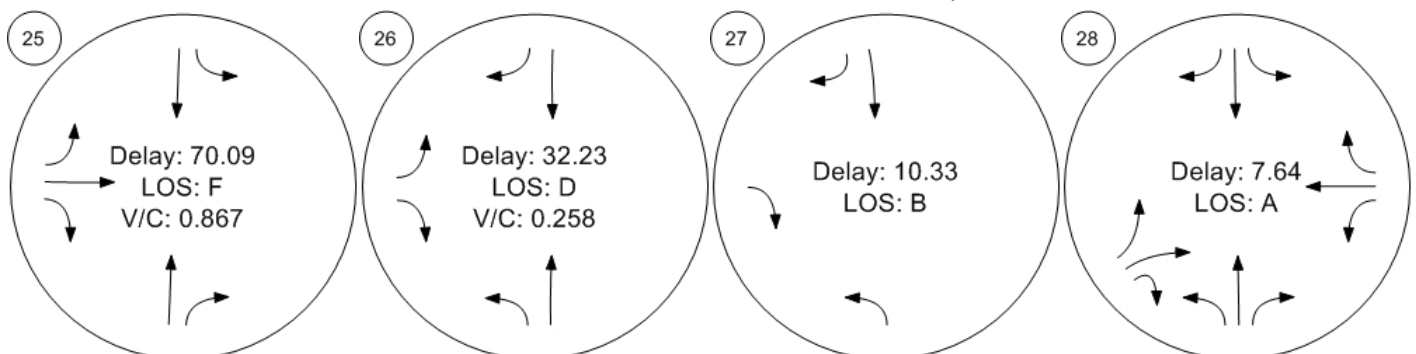
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

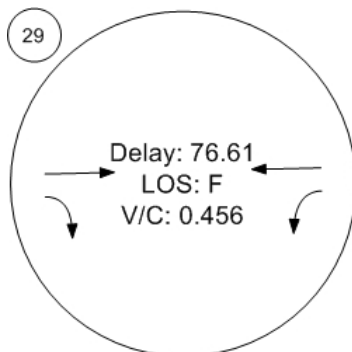


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Scenario 5: FB 2023 AM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.535	45.1	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	0.738	39.4	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.095	8.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.815	52.7	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.132	162.6	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.089	36.7	E
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		14.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		14.3	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.574	73.9	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	45.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	131	0	293	473	0	61	0	0	984	0	138	1622
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	0	293	473	0	61	0	0	984	0	138	1622
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	0	73	118	0	15	0	0	246	0	35	406
Total Analysis Volume [veh/h]	131	0	293	473	0	61	0	0	984	0	138	1622
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.16	0.16	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.07	0.19	0.13	0.04	0.28	0.07	1.02
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	847	585	261	1335	311	1443
d1, Uniform Delay [s]	10.52	11.96	36.20	32.63	24.22	33.73	3.28
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	1.12	2.71	0.45	0.81	0.99	65.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.35	0.81	0.23	0.74	0.44	1.12
d, Delay for Lane Group [s/veh]	10.83	13.08	38.91	33.08	25.03	34.72	68.86
Lane Group LOS	B	B	D	C	C	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.32	3.41	5.13	1.17	8.79	2.76	26.28
50th-Percentile Queue Length [ft]	33.00	85.37	128.26	29.36	219.79	68.94	657.02
95th-Percentile Queue Length [veh]	2.38	6.15	8.85	2.11	13.65	4.96	38.48
95th-Percentile Queue Length [ft]	59.39	153.67	221.13	52.85	341.35	124.09	962.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.83	0.00	13.08	38.91	0.00	33.08	0.00	0.00	25.03	0.00	34.72	68.86
Movement LOS	B		B	D		C			C		C	F
d_A, Approach Delay [s/veh]	12.38			38.25			25.03			66.18		
Approach LOS	B			D			C			E		
d_I, Intersection Delay [s/veh]	45.05											
Intersection LOS	D											
Intersection V/C	0.535											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	39.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	288	23	38	76	125	70	265	481	115	146	947	733
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	288	23	38	76	125	70	265	481	115	146	947	733
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	6	10	19	31	18	66	120	29	37	237	183
Total Analysis Volume [veh/h]	288	23	38	76	125	70	265	481	115	146	947	733
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	21	0	35	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	8	8	8	60	46	46	9	45	45
g / C, Green / Cycle	0.11	0.11	0.11	0.09	0.09	0.09	0.66	0.51	0.51	0.10	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.02	0.04	0.07	0.04	0.44	0.14	0.07	0.08	0.46	0.51
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	602	3547	1583	1774	1863	1610
c, Capacity [veh/h]	199	201	178	163	171	146	370	1821	813	186	936	809
d1, Uniform Delay [s]	38.93	38.93	36.40	38.85	39.86	38.90	25.89	12.35	11.51	39.37	20.65	22.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.41	6.35	0.59	2.06	5.86	2.45	11.23	0.35	0.36	7.12	14.77	36.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.78	0.21	0.47	0.73	0.48	0.72	0.26	0.14	0.79	0.91	1.02
d, Delay for Lane Group [s/veh]	45.34	45.28	36.99	40.91	45.72	41.35	37.12	12.70	11.87	46.49	35.41	59.23
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.64	3.66	0.78	1.67	2.94	1.55	2.88	2.67	1.23	3.48	18.98	23.84
50th-Percentile Queue Length [ft]	91.00	91.52	19.56	41.74	73.46	38.82	72.03	66.64	30.76	86.88	474.48	595.89
95th-Percentile Queue Length [veh]	6.55	6.59	1.41	3.01	5.29	2.79	5.19	4.80	2.21	6.26	26.12	32.35
95th-Percentile Queue Length [ft]	163.80	164.73	35.21	75.13	132.22	69.87	129.65	119.96	55.37	156.38	653.10	808.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.31	45.28	36.99	40.91	45.72	41.35	37.12	12.70	11.87	46.49	37.73	59.23
Movement LOS	D	D	D	D	D	D	D	B	B	D	D	E
d_A, Approach Delay [s/veh]	44.40			43.24			20.11			47.06		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	39.45											
Intersection LOS	D											
Intersection V/C	0.738											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.095

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	374	96	103	219	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	374	96	103	219	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	24	26	55	0	0
Total Analysis Volume [veh/h]	374	96	103	219	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.65	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.31	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.82	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.77		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.13					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	52.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.815

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	607	0	0	453	250	105
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	607	0	0	453	250	105
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	0	0	113	63	26
Total Analysis Volume [veh/h]	607	0	0	453	250	105
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.81	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	52.73	11.13
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.76	0.53
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	168.96	13.31
d_A, Approach Delay [s/veh]	0.00		0.00		40.42	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	10.14					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	162.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.132

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	394	31	25	674	0	227	25	641	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	394	31	25	674	0	227	25	641	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	99	8	6	169	0	57	6	160	0	0	0
Total Analysis Volume [veh/h]	0	394	31	25	674	0	227	25	641	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	1.04	0.13	0.97	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.26	0.00	0.00	160.08	162.61	53.67	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.32	0.66	0.00	12.24	13.34	14.43	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	33.10	16.55	0.00	306.05	333.41	360.77	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.30			83.77			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	37.19											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	36.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	31	408	1001	244	11	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	408	1001	244	11	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	102	250	61	3	7
Total Analysis Volume [veh/h]	31	408	1001	244	11	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.00	0.09	0.06
d_M, Delay for Movement [s/veh]	11.87	0.00	0.00	0.00	36.65	15.94
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh]	1.88	0.94	0.00	0.00	0.53	0.53
95th-Percentile Queue Length [ft]	46.97	23.49	0.00	0.00	13.16	13.16
d_A, Approach Delay [s/veh]	0.84		0.00		21.94	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	E					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

14.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	37	0	958	44	0	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	0	958	44	0	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	240	11	0	6
Total Analysis Volume [veh/h]	37	0	958	44	0	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.13	4.71	4.58	0.07
95th-Percentile Queue Length [ft]	3.36	117.81	114.40	1.75
Approach Delay [s/veh]	7.37	14.91		6.50
Approach LOS	A	B		A
Intersection Delay [s/veh]	14.46			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 14.3
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	86	9	3	101	0	2	0	0	0	0
Total Analysis Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.40	1.34	4.55	
95th-Percentile Queue Length [ft]	34.89	33.59	113.64	
Approach Delay [s/veh]	11.30		17.38	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	14.32			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	184	0	5	74	0	64	23	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	0	5	74	0	64	23	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	0	1	19	0	16	6	70
Total Analysis Volume [veh/h]	184	0	5	74	0	64	23	281
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.16	0.66	2.84
95th-Percentile Queue Length [ft]	54.12	16.57	70.95
Approach Delay [s/veh]	13.30	14.77	
Approach LOS	B	B	
Intersection Delay [s/veh]	14.32		
Intersection LOS	B		



Intersection Level Of Service Report

Intersection 29: US 101 SB On-ramp & Sunset

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 73.9
 Level Of Service: F
 Volume to Capacity (v/c): 0.574

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1651	447	64	2498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1651	447	64	2498
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	413	112	16	625
Total Analysis Volume [veh/h]	0	0	1651	447	64	2498
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.57	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	73.85	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.76	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	69.01	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.84	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.01					
Intersection LOS	F					

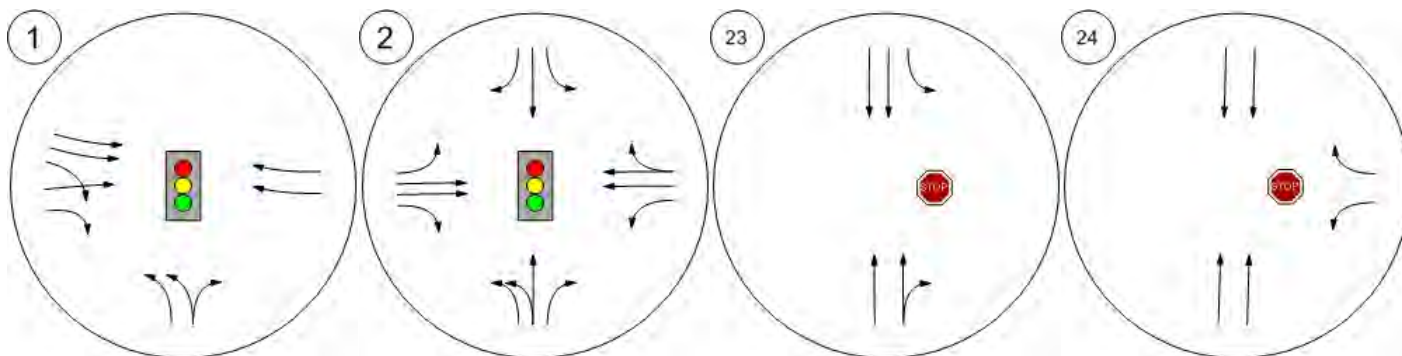
Study Intersections



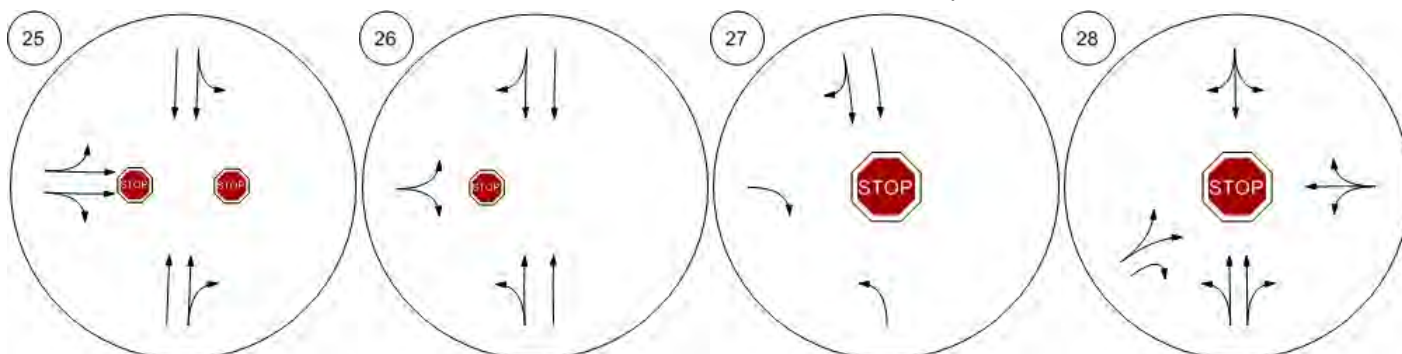
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



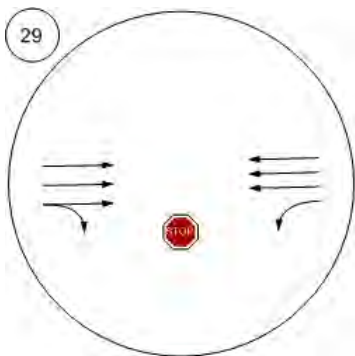
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



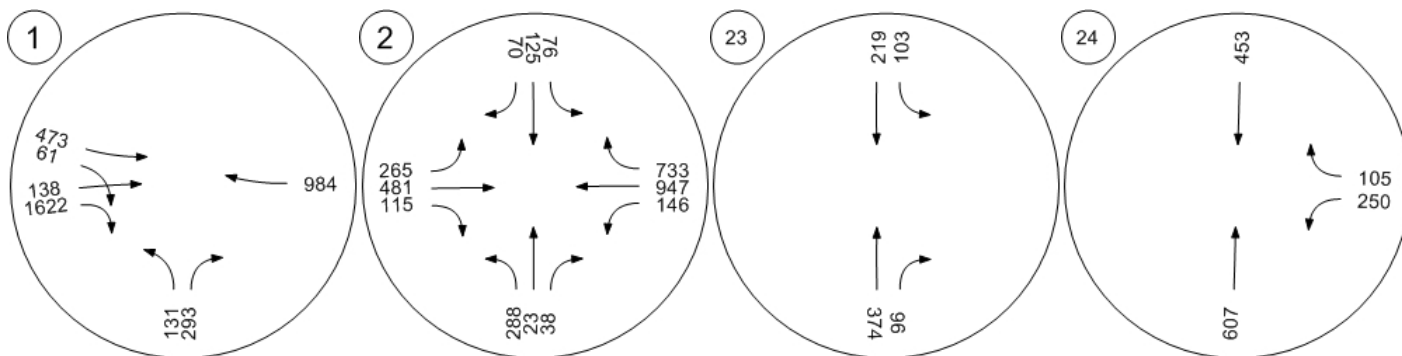
US 101 SB On-ramp & Suns



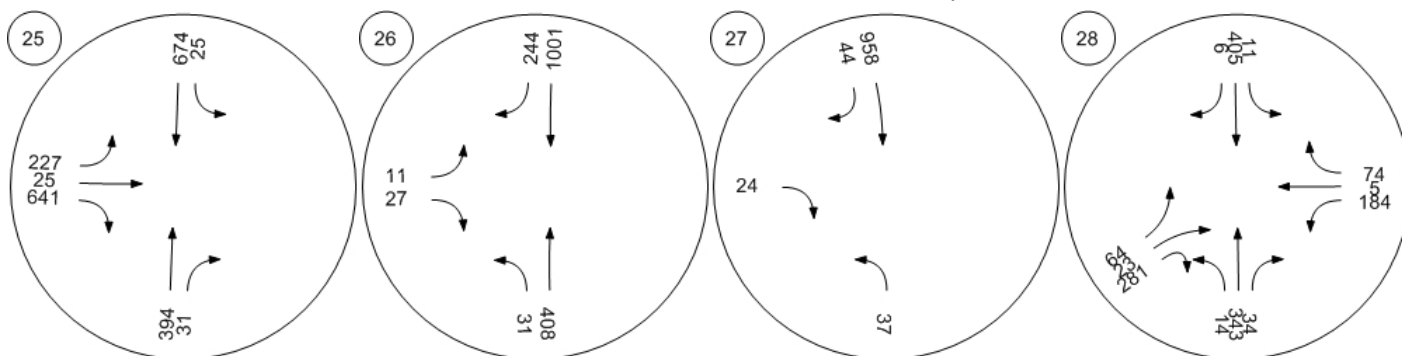
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



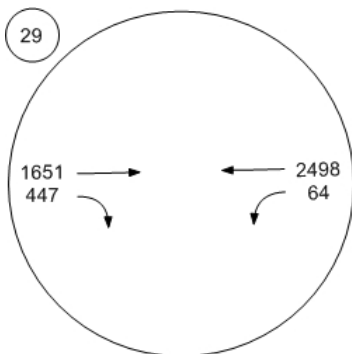
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



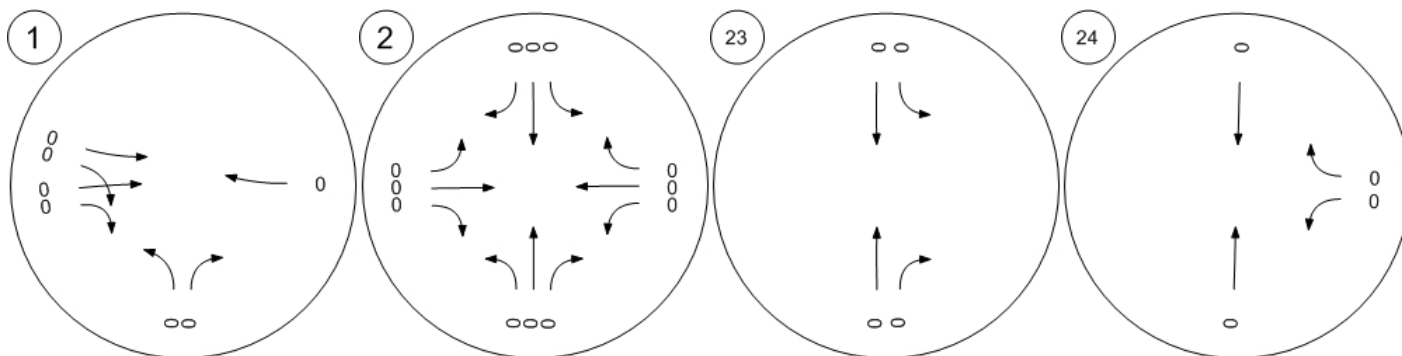
US 101 SB On-ramp & Suns



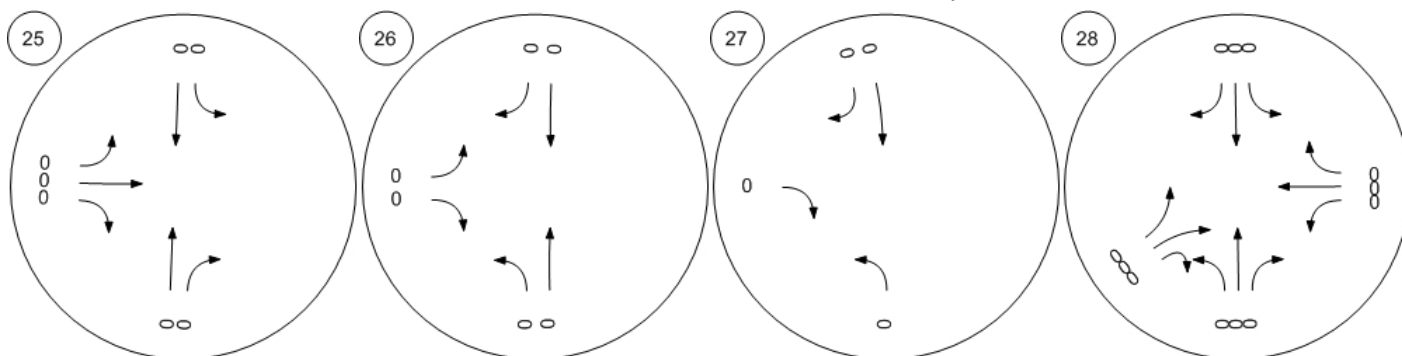
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



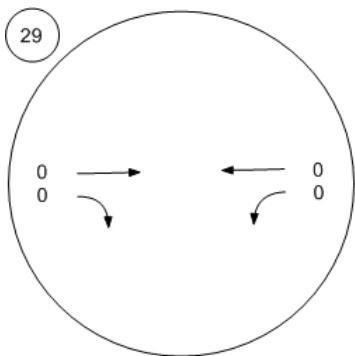
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



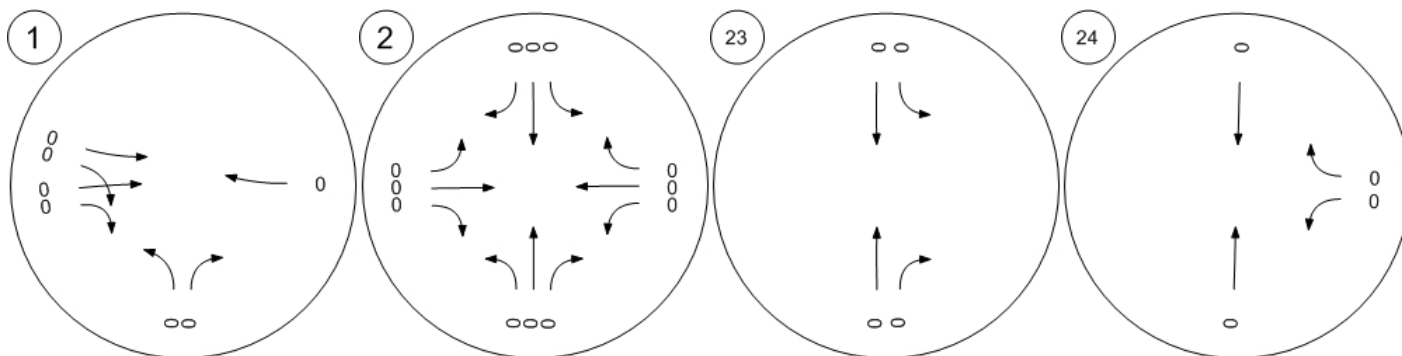
US 101 SB On-ramp & Suns



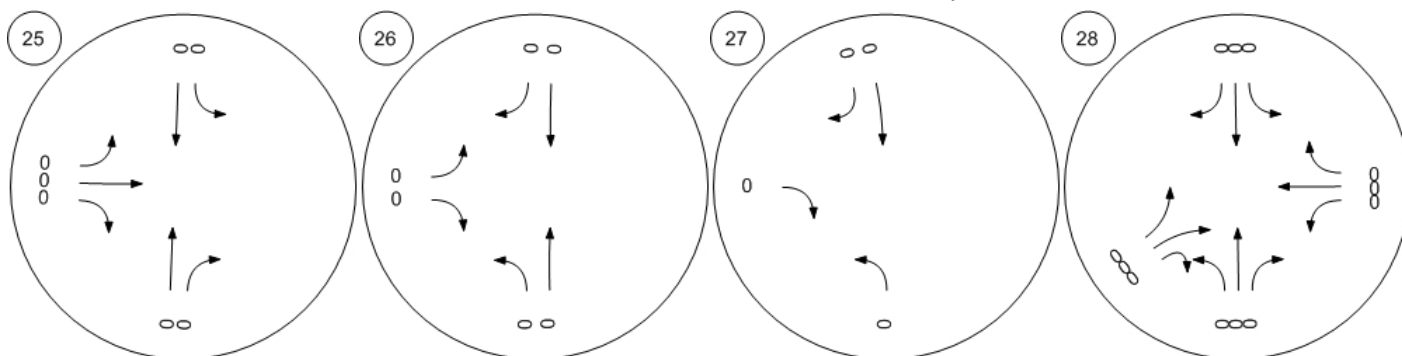
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



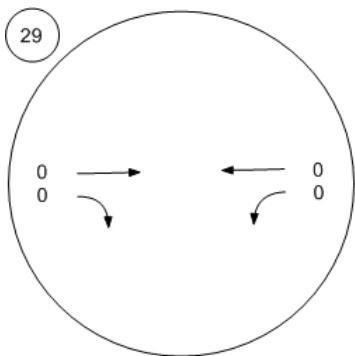
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



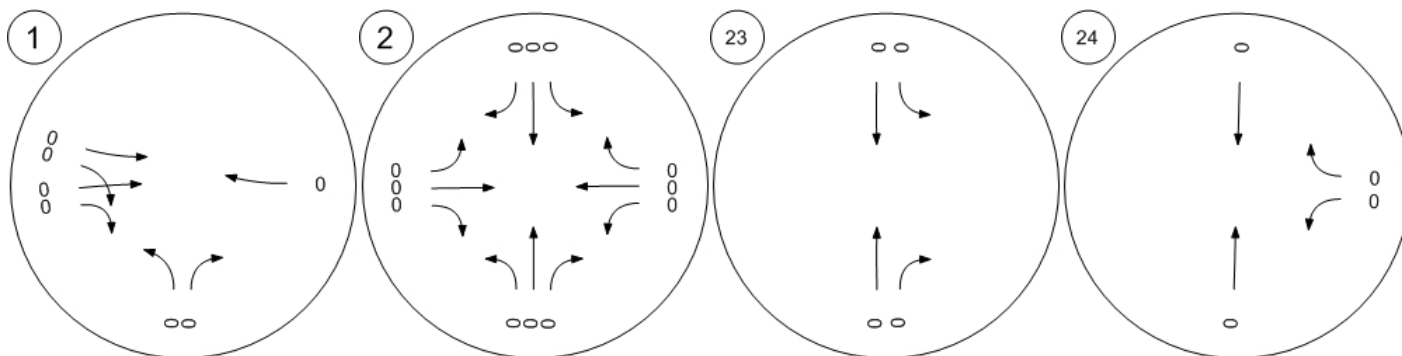
US 101 SB On-ramp & Suns



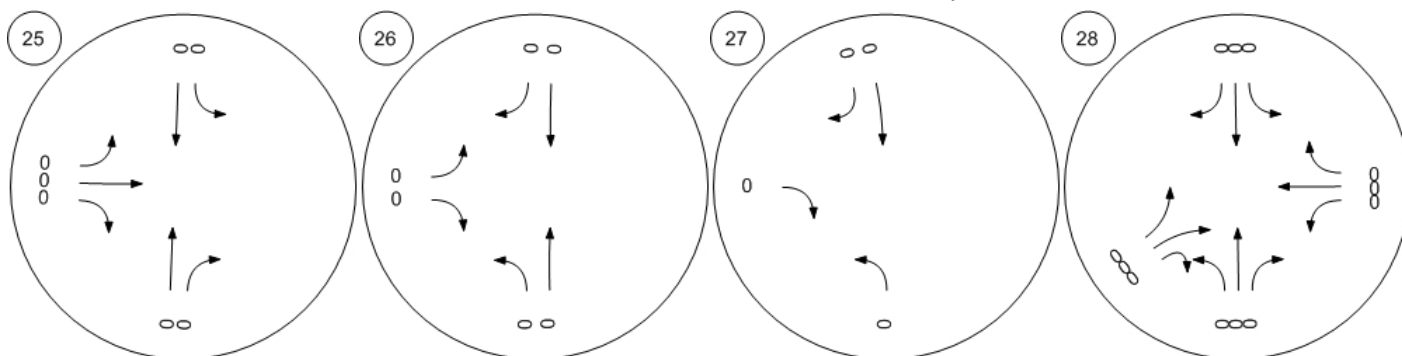
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



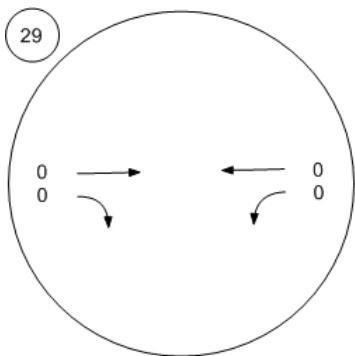
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



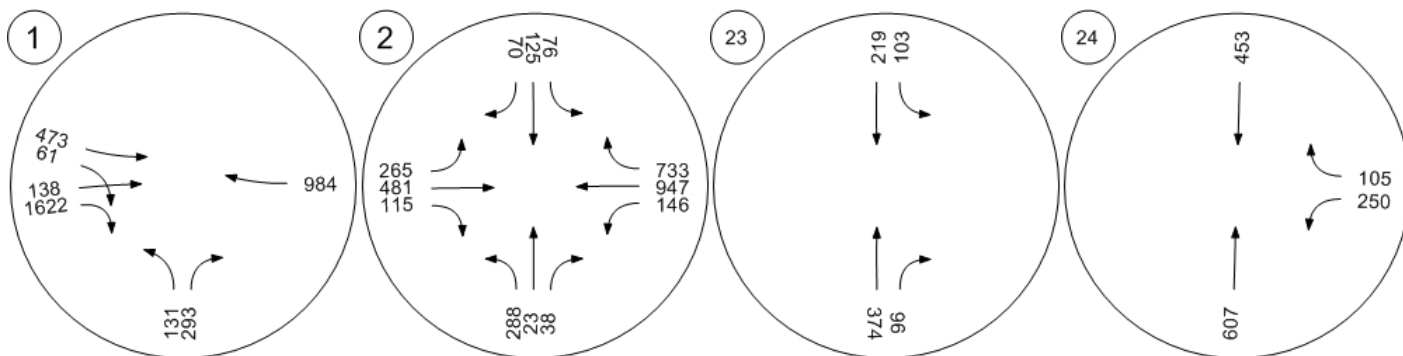
US 101 SB On-ramp & Suns



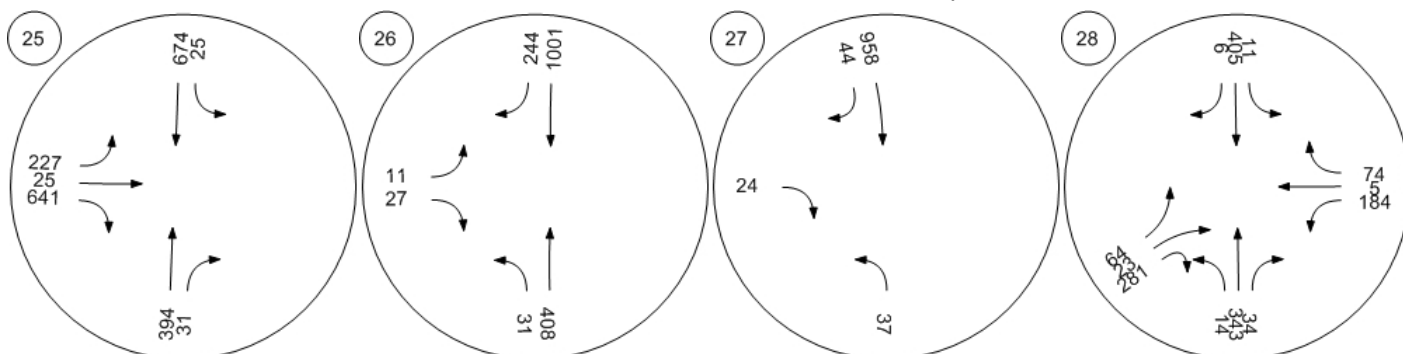
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ramp



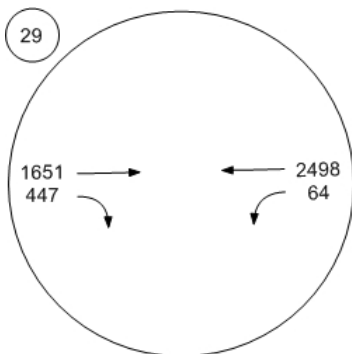
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



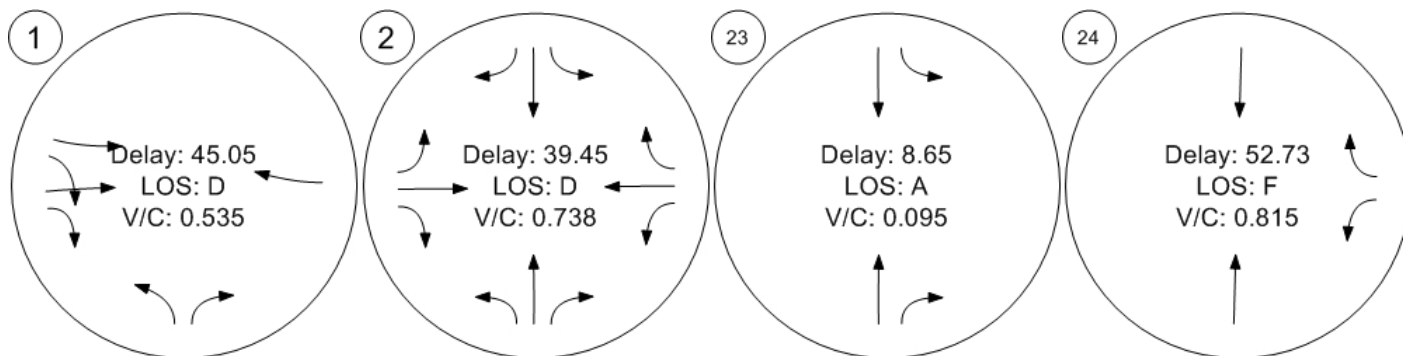
US 101 SB On-ramp & Suns



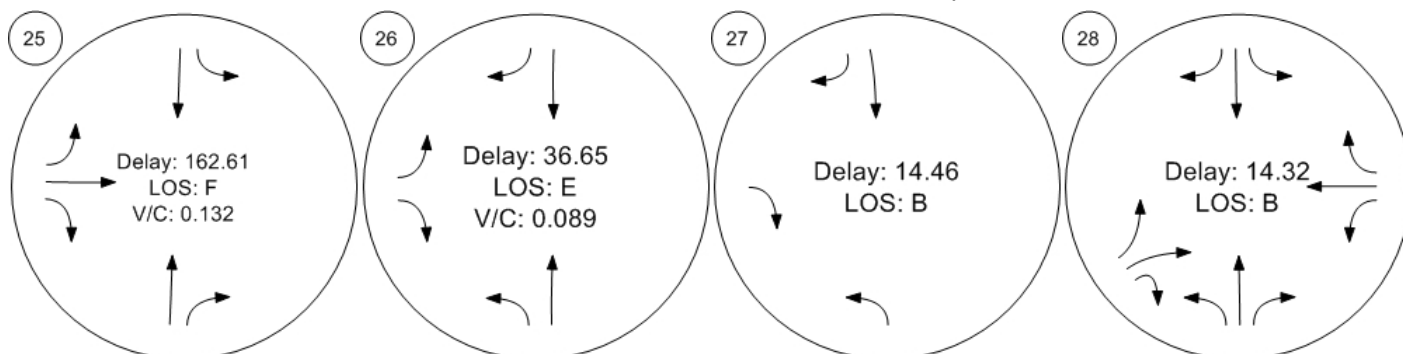
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

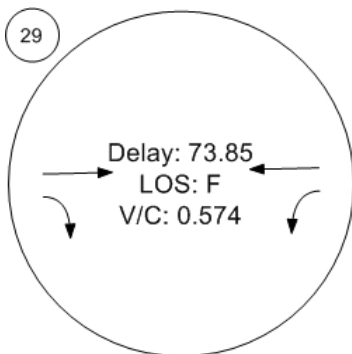


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Report File: S:\...\FB2023PM.pdf

Scenario 6: FB 2023 PM
5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.674	20.4	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	0.782	41.6	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.127	10.7	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.833	92.9	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.089	196.4	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.396	50.5	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		11.0	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.8	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.539	492.7	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	518	0	437	669	0	81	0	0	678	0	309	1022
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	0	437	669	0	81	0	0	678	0	309	1022
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	0	109	167	0	20	0	0	170	0	77	256
Total Analysis Volume [veh/h]	518	0	437	669	0	81	0	0	678	0	309	1022
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	36	22	22	46	20	82
g / C, Green / Cycle	0.40	0.40	0.25	0.25	0.52	0.22	0.91
(v / s)_i Volume / Saturation Flow Rate	0.27	0.30	0.19	0.05	0.19	0.17	0.65
s, saturation flow rate [veh/h]	1774	1597	3547	1583	3547	1863	1583
c, Capacity [veh/h]	701	631	879	392	1831	417	1443
d1, Uniform Delay [s]	22.60	23.48	31.42	26.87	13.03	32.51	0.50
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.37	8.14	1.39	0.26	0.12	2.60	2.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

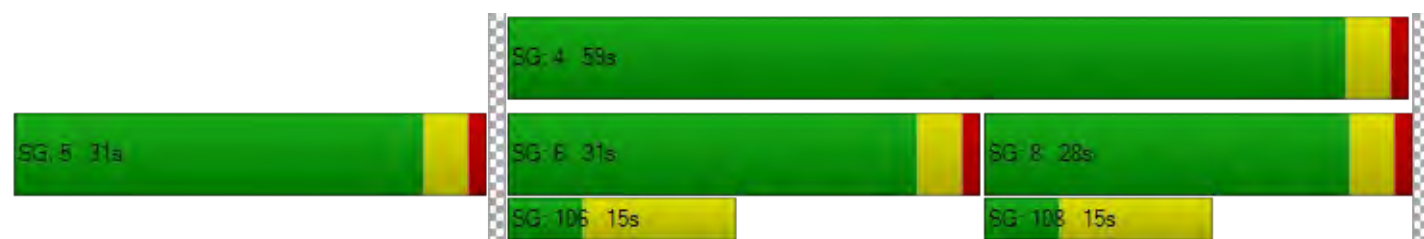
X, volume / capacity	0.68	0.75	0.76	0.21	0.37	0.74	0.71
d, Delay for Lane Group [s/veh]	27.96	31.61	32.81	27.12	13.16	35.11	3.46
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.09	9.71	6.74	1.39	3.90	6.42	1.19
50th-Percentile Queue Length [ft]	227.19	242.83	168.54	34.72	97.47	160.59	29.69
95th-Percentile Queue Length [veh]	14.03	14.82	11.00	2.50	7.02	10.58	2.14
95th-Percentile Queue Length [ft]	350.79	370.62	274.99	62.50	175.44	264.50	53.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.25	0.00	31.61	32.81	0.00	27.12	0.00	0.00	13.16	0.00	35.11	3.46
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	29.78			32.20			13.16			10.81		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.44											
Intersection LOS	C											
Intersection V/C	0.674											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	41.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	537	44	144	51	79	42	306	997	80	107	646	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	537	44	144	51	79	42	306	997	80	107	646	776
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	11	36	13	20	11	77	249	20	27	162	194
Total Analysis Volume [veh/h]	537	44	144	51	79	42	306	997	80	107	646	776
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	47	0	9	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	46	46	7	43	43
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.51	0.51	0.08	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.09	0.03	0.04	0.03	0.45	0.28	0.05	0.06	0.35	0.49
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	674	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	111	116	99	369	1826	815	139	893	759
d1, Uniform Delay [s]	37.35	37.34	34.38	40.74	41.32	40.64	27.31	14.74	11.16	40.70	18.67	23.43
k, delay calibration	0.39	0.39	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	41.60	41.00	1.75	2.96	6.76	2.87	19.11	1.18	0.24	8.68	5.06	38.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.98	0.98	0.55	0.46	0.68	0.42	0.83	0.55	0.10	0.77	0.72	1.02
d, Delay for Lane Group [s/veh]	78.96	78.35	36.14	43.69	48.08	43.52	46.42	15.92	11.40	49.38	23.74	61.84
Lane Group LOS	E	E	D	D	D	D	D	B	B	D	C	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.63	9.64	2.97	1.17	1.91	0.97	4.24	6.71	0.83	2.63	11.29	22.90
50th-Percentile Queue Length [ft]	240.83	241.02	74.30	29.26	47.86	24.15	106.01	167.70	20.83	65.77	282.35	572.50
95th-Percentile Queue Length [veh]	14.72	14.73	5.35	2.11	3.45	1.74	7.62	10.96	1.50	4.74	16.81	31.28
95th-Percentile Queue Length [ft]	368.08	368.32	133.75	52.68	86.15	43.47	190.44	273.89	37.49	118.39	420.14	781.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	78.68	78.35	36.14	43.69	48.08	43.52	46.42	15.92	11.40	49.38	23.74	61.84
Movement LOS	E	E	D	D	D	D	D	B	B	D	C	F
d_A, Approach Delay [s/veh]	70.21			45.66			22.40			44.87		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	41.57											
Intersection LOS	D											
Intersection V/C	0.782											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.127

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	786	152	92	134	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	786	152	92	134	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	197	38	23	34	0	0
Total Analysis Volume [veh/h]	786	152	92	134	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.13	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.68	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.43	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	10.82	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.35		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	92.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1155	0	0	304	126	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1155	0	0	304	126	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	289	0	0	76	32	26
Total Analysis Volume [veh/h]	1155	0	0	304	126	102
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.83	0.22
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	92.93	15.06
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	5.48	0.84
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	136.90	21.01
d_A, Approach Delay [s/veh]	0.00		0.00		58.09	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	7.85					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	196.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	843	16	12	415	0	288	14	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	843	16	12	415	0	288	14	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	211	4	3	104	0	72	4	89	0	0	0
Total Analysis Volume [veh/h]	0	843	16	12	415	0	288	14	354	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.00	0.00	1.17	0.09	0.44	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.70	0.00	0.00	188.16	196.40	13.05	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.12	0.56	0.00	15.26	8.77	2.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	27.93	13.97	0.00	381.39	219.37	57.35	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.27			93.84			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	31.76											
Intersection LOS	F											




Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 50.5
 Level Of Service: F
 Volume to Capacity (v/c): 0.396

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	92	862	614	147	47	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	862	614	147	47	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	216	154	37	12	13
Total Analysis Volume [veh/h]	92	862	614	147	47	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.01	0.00	0.40	0.09
d_M, Delay for Movement [s/veh]	9.77	0.00	0.00	0.00	50.47	25.97
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh]	3.59	1.80	0.00	0.00	2.37	2.37
95th-Percentile Queue Length [ft]	89.76	44.88	0.00	0.00	59.28	59.28
d_A, Approach Delay [s/veh]	0.94		0.00		37.49	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.56					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

11.0
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	118	0	741	3	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	0	741	3	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	0	185	1	0	7
Total Analysis Volume [veh/h]	118	0	741	3	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.47	2.65	2.64	0.09
95th-Percentile Queue Length [ft]	11.87	66.25	66.11	2.16
Approach Delay [s/veh]	7.85	11.61		6.70
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.96			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.8
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	20	8	1	9	0	4	0	0	0	0
Total Analysis Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.24	0.20	
95th-Percentile Queue Length [ft]	6.58	5.95	4.92	
Approach Delay [s/veh]	7.81		7.55	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.79			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	83	0	2	34	0	15	10	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	2	34	0	15	10	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	1	9	0	4	3	20
Total Analysis Volume [veh/h]	83	0	2	34	0	15	10	78
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.49	0.12	0.31
95th-Percentile Queue Length [ft]	12.32	2.88	7.73
Approach Delay [s/veh]	8.00	7.65	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.79		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	492.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.539

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2287	662	62	2058
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2287	662	62	2058
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	572	166	16	515
Total Analysis Volume [veh/h]	0	0	2287	662	62	2058
Pedestrian Volume [ped/h]	0		0		0	

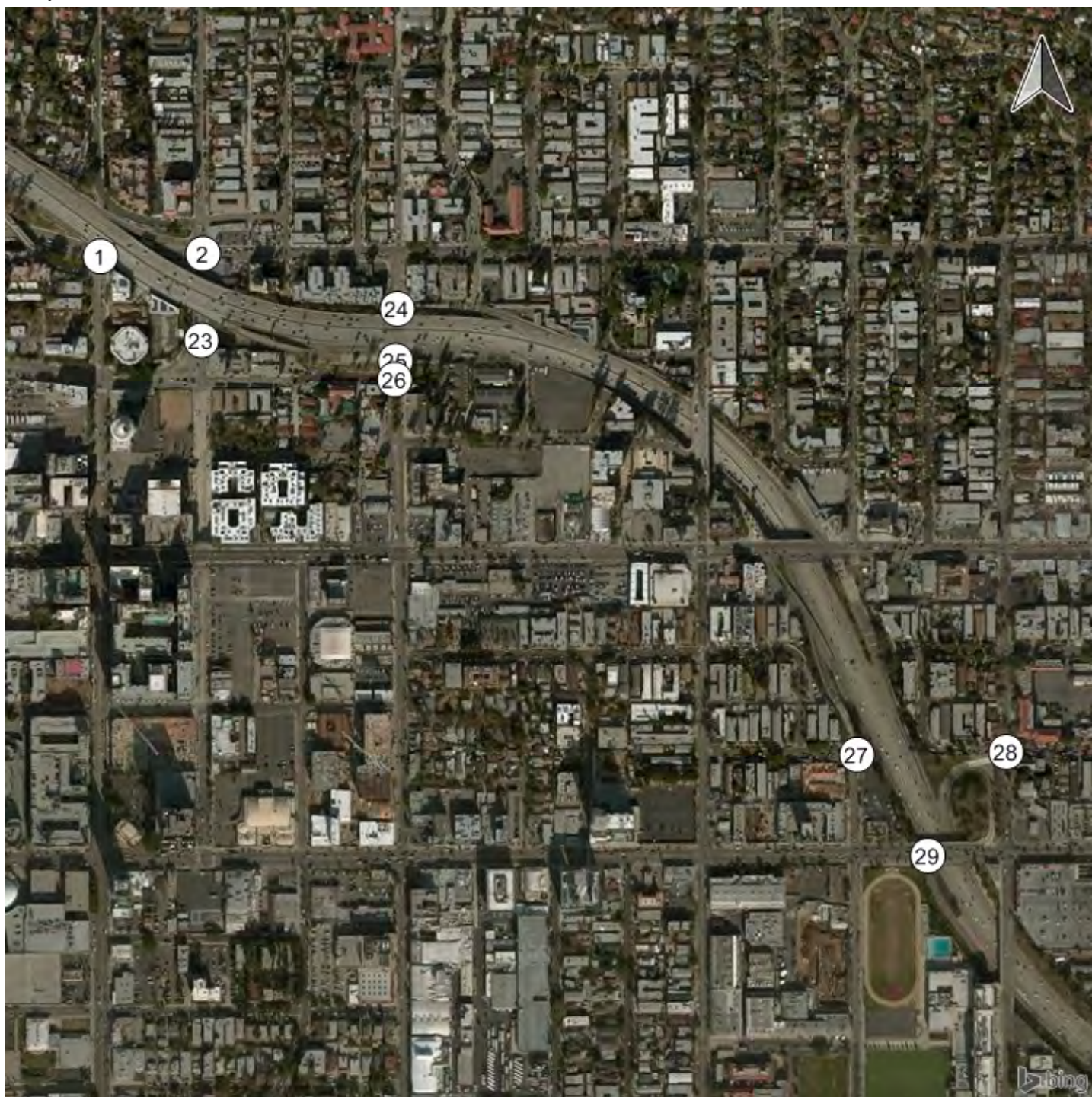
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.54	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	492.65	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.37	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	159.18	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.41	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	6.03					
Intersection LOS	F					

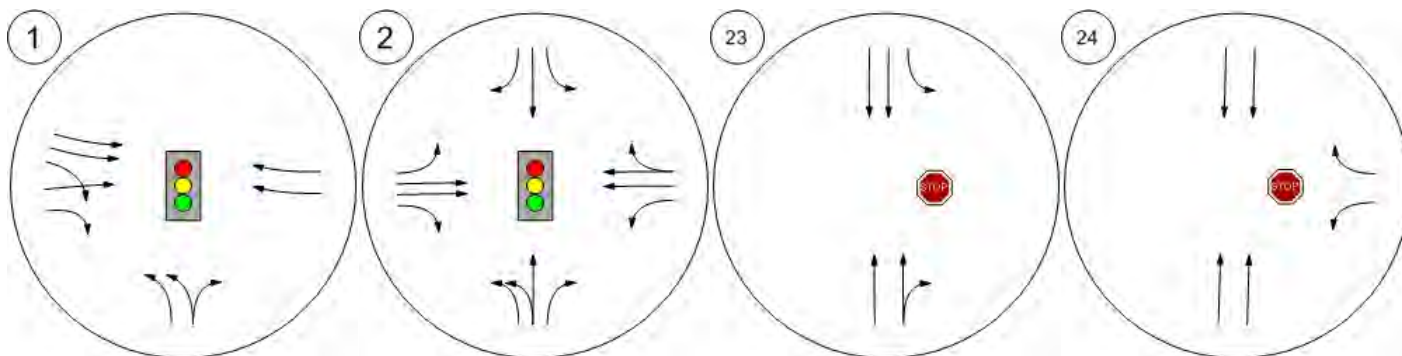
Study Intersections



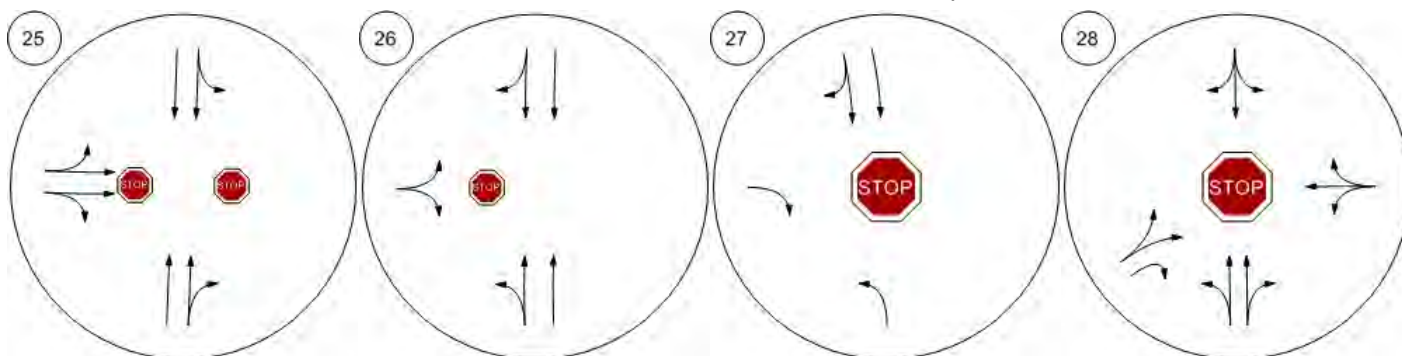
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ram



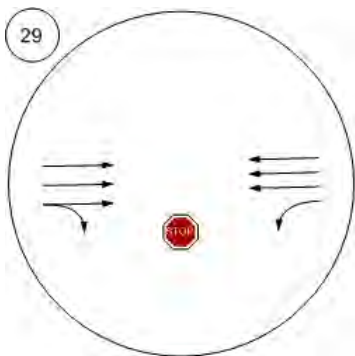
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



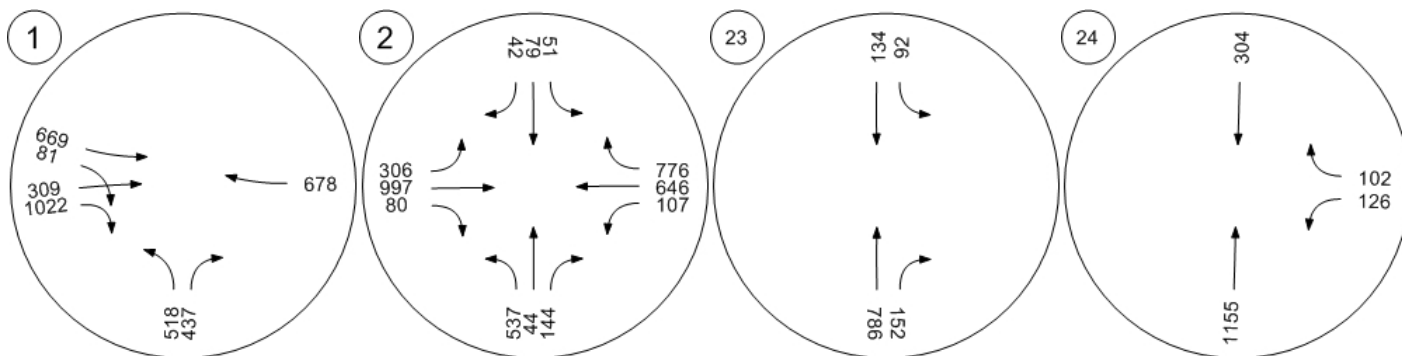
US 101 SB On-ramp & Suns



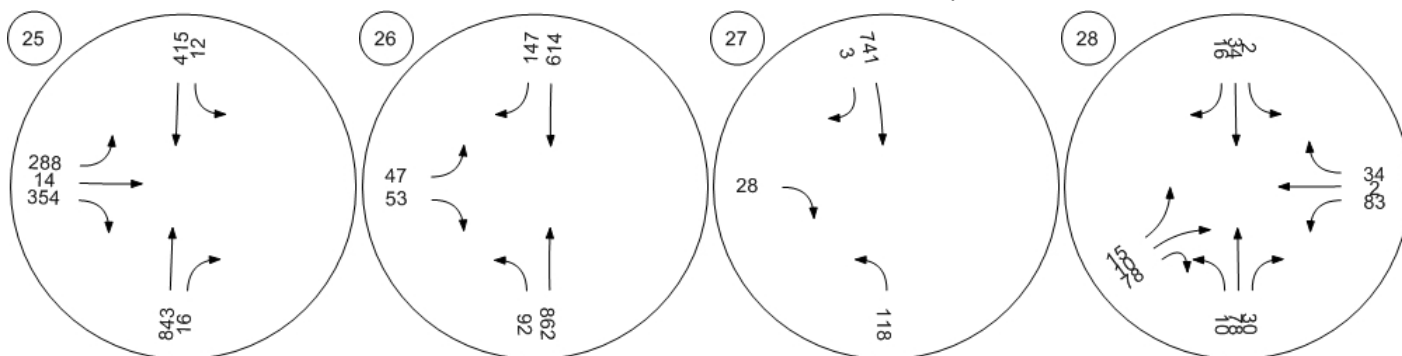
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



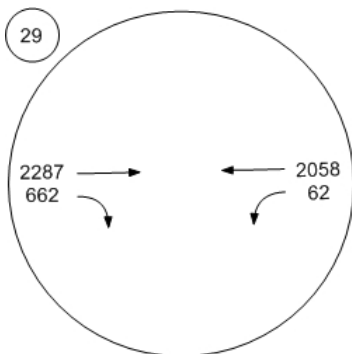
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



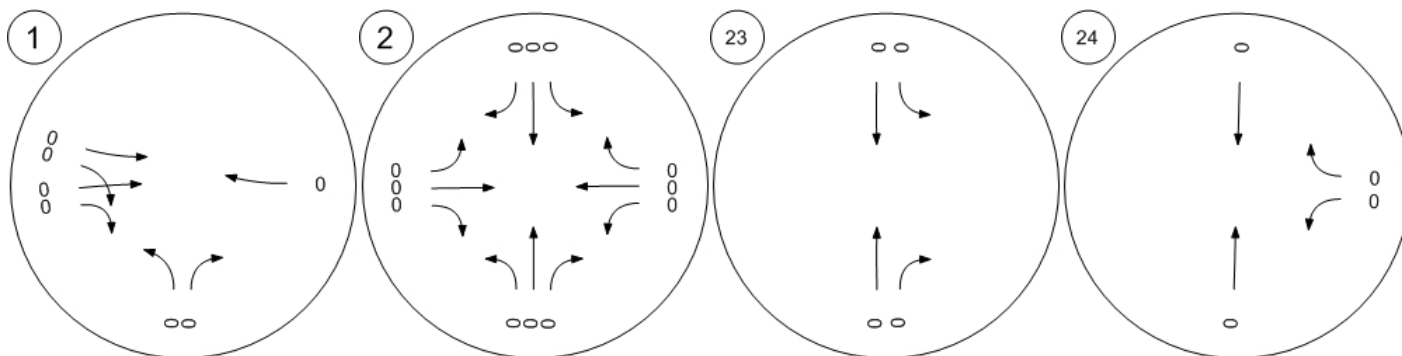
US 101 SB On-ramp & Suns



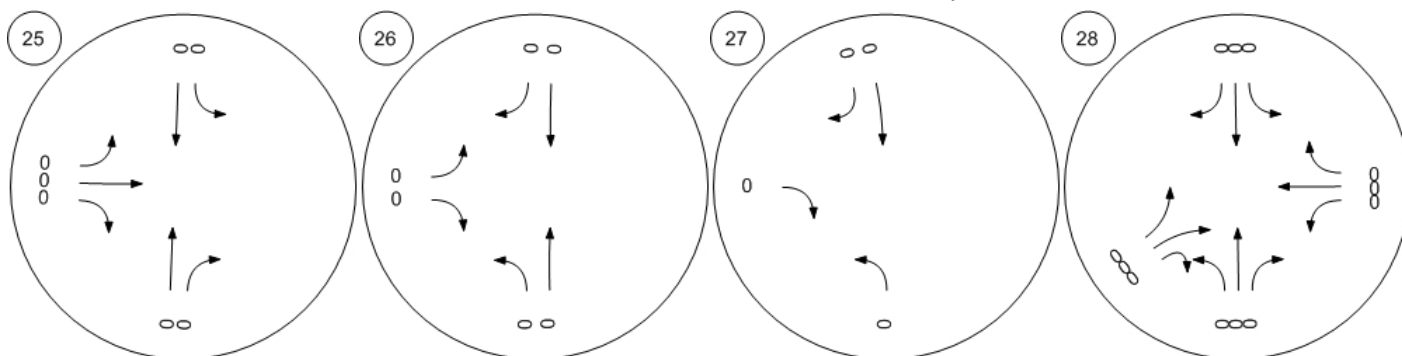
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



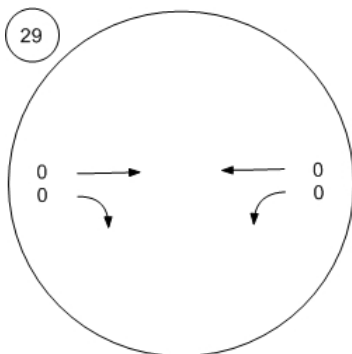
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



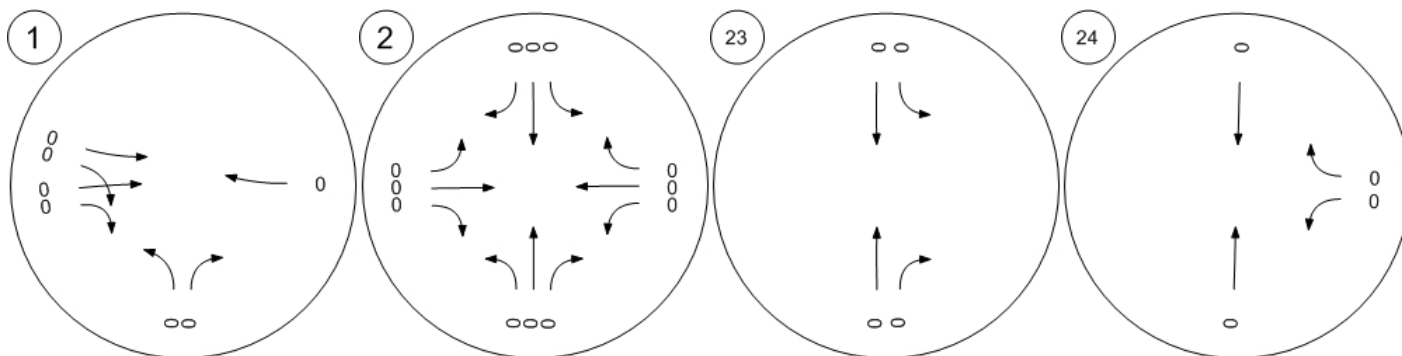
US 101 SB On-ramp & Suns



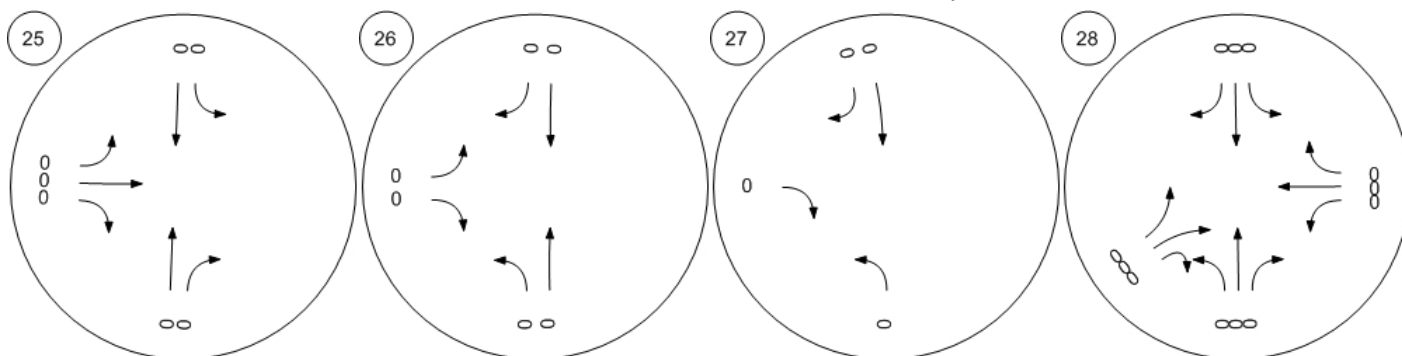
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



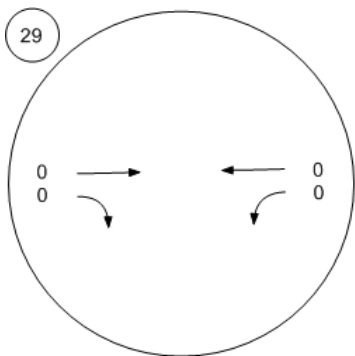
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



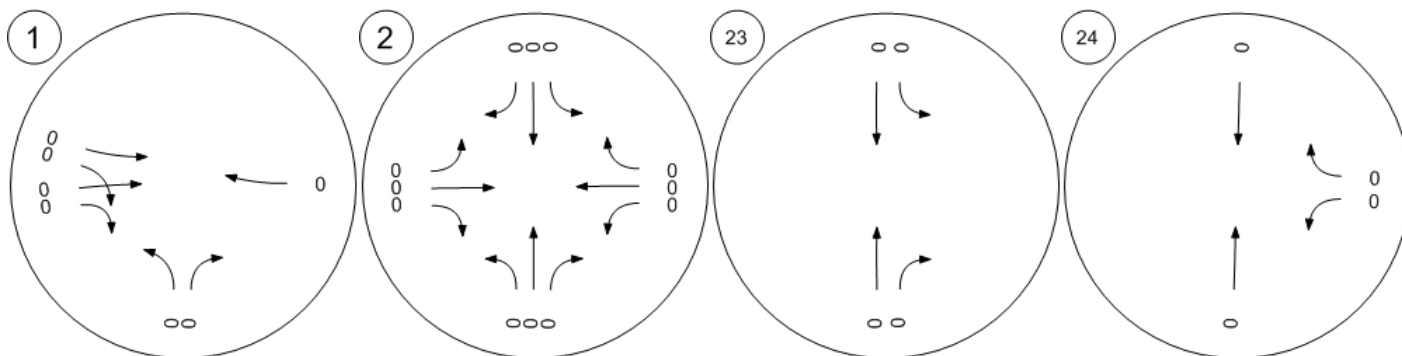
US 101 SB On-ramp & Suns



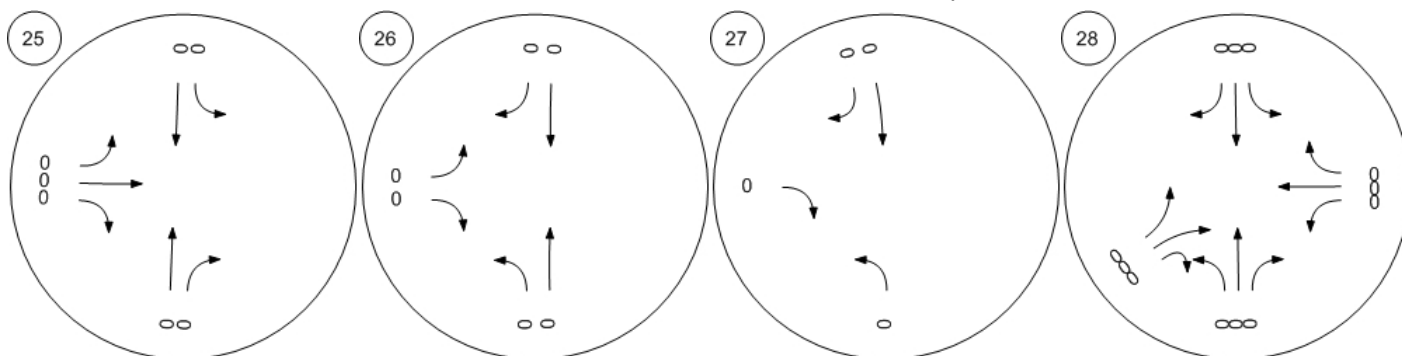
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



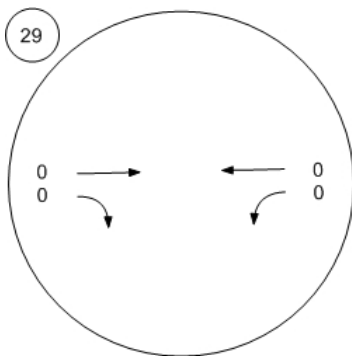
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



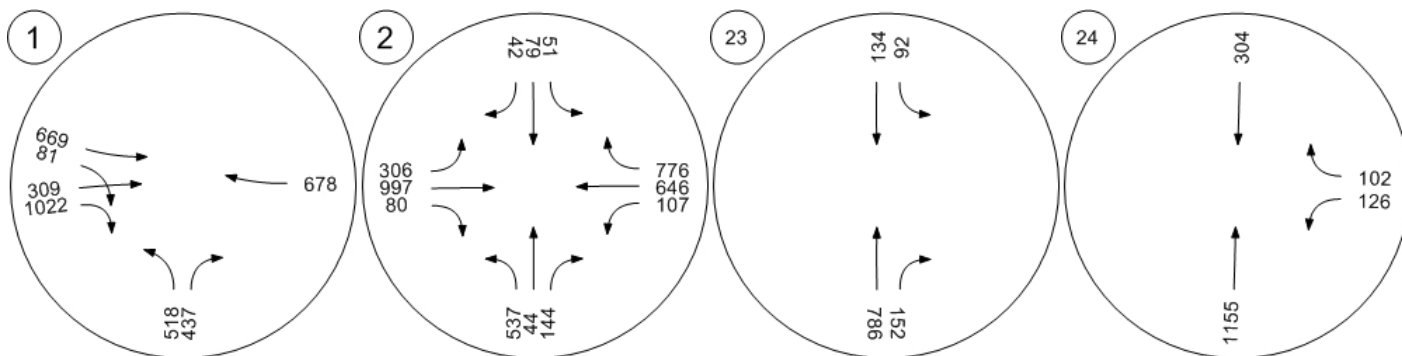
US 101 SB On-ramp & Suns



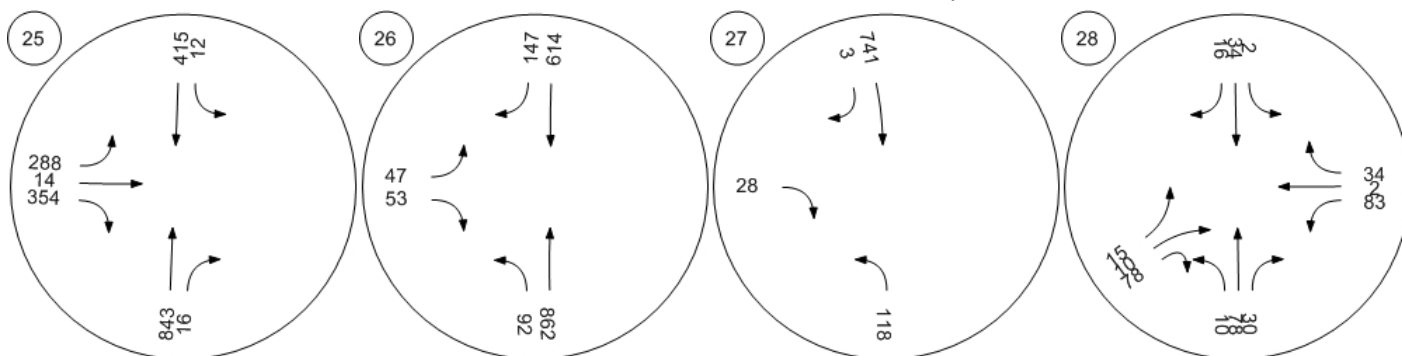
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



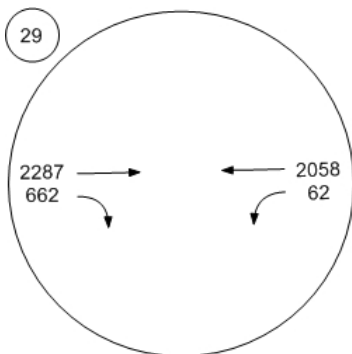
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



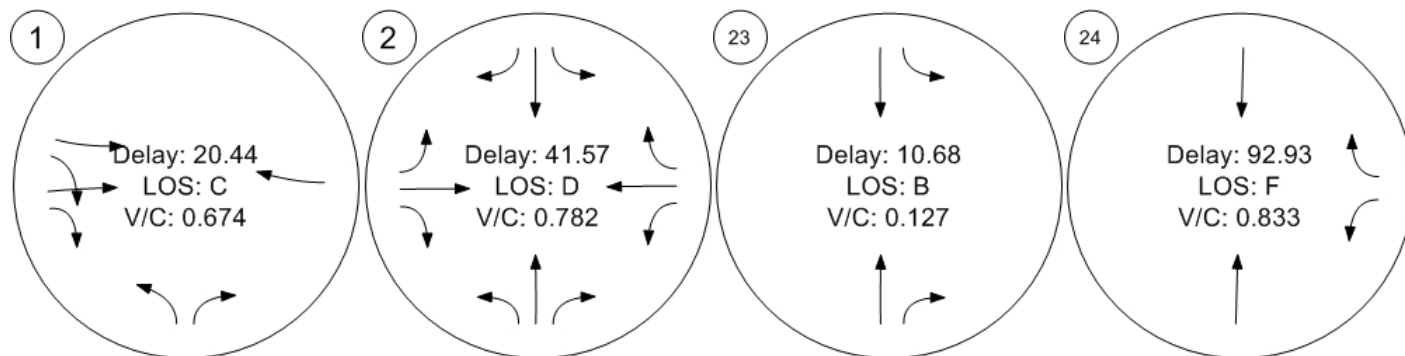
US 101 SB On-ramp & Suns



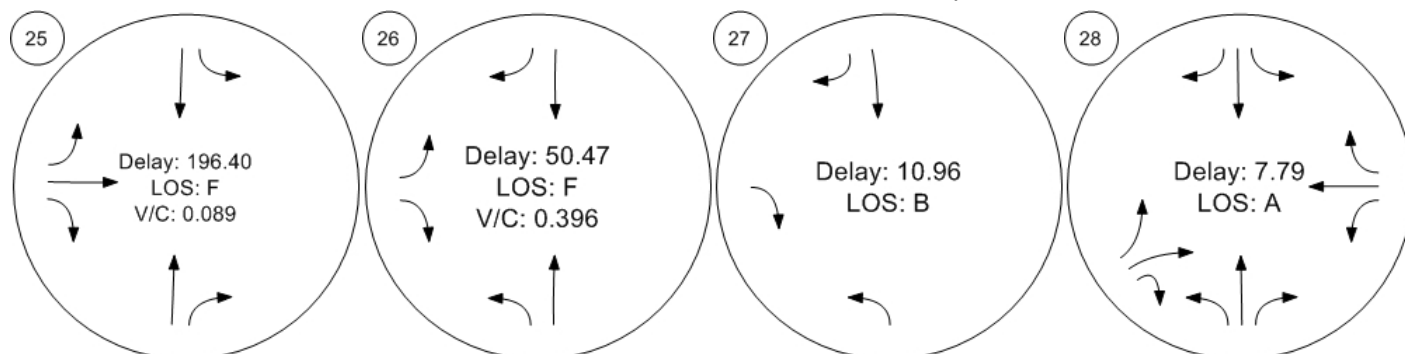
Traffic Conditions



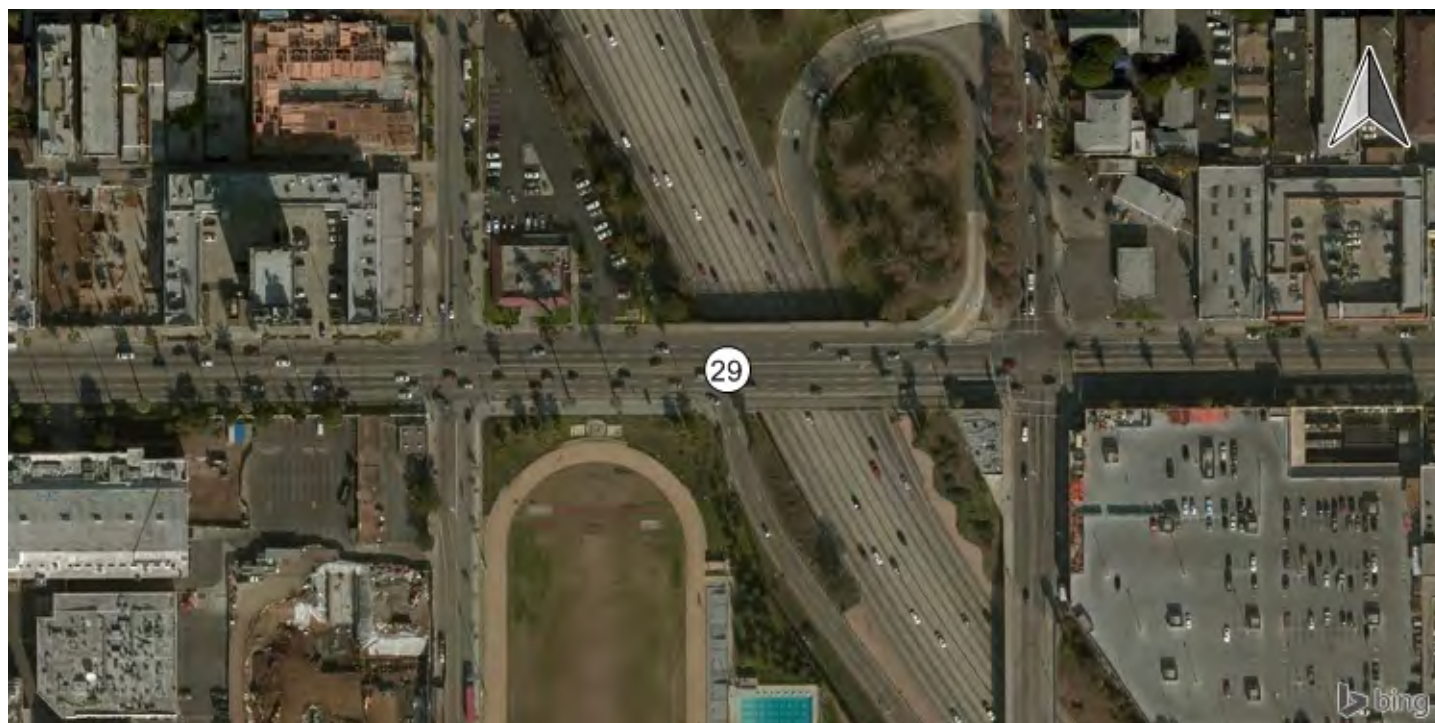
Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

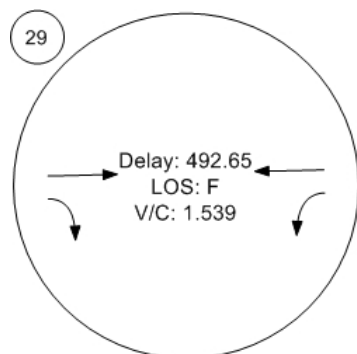


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Report File: S:\...\FP2023AM.pdf

Scenario 7: FP 2023 AM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.535	45.8	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	0.746	41.1	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.097	8.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.826	54.8	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.133	167.6	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.090	37.0	E
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		14.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		14.3	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.597	79.2	F



V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	45.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1628
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1628
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	0	73	119	0	15	0	0	247	0	35	407
Total Analysis Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1628
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.17	0.17	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.07	0.19	0.13	0.04	0.28	0.07	1.03
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	847	586	261	1335	311	1443
d1, Uniform Delay [s]	10.52	11.96	36.21	32.63	24.26	33.73	3.28
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	1.12	2.73	0.45	0.83	0.99	67.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.35	0.81	0.23	0.74	0.44	1.13
d, Delay for Lane Group [s/veh]	10.83	13.08	38.94	33.08	25.09	34.73	70.53
Lane Group LOS	B	B	D	C	C	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.32	3.41	5.14	1.17	8.86	2.76	26.95
50th-Percentile Queue Length [ft]	33.00	85.37	128.59	29.36	221.38	68.95	673.73
95th-Percentile Queue Length [veh]	2.38	6.15	8.86	2.11	13.74	4.96	39.46
95th-Percentile Queue Length [ft]	59.39	153.67	221.58	52.84	343.39	124.11	986.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.83	0.00	13.08	38.94	0.00	33.08	0.00	0.00	25.09	0.00	34.73	70.53
Movement LOS	B		B	D		C			C		C	F
d_A, Approach Delay [s/veh]	12.38			38.27			25.09			67.73		
Approach LOS	B			D			C			E		
d_I, Intersection Delay [s/veh]	45.81											
Intersection LOS	D											
Intersection V/C	0.535											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	41.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	312	23	38	76	125	70	265	481	116	146	947	733
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	23	38	76	125	70	265	481	116	146	947	733
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	6	10	19	31	18	66	120	29	37	237	183
Total Analysis Volume [veh/h]	312	23	38	76	125	70	265	481	116	146	947	733
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	21	0	35	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	8	8	8	59	46	46	9	45	45
g / C, Green / Cycle	0.12	0.12	0.12	0.09	0.09	0.09	0.66	0.51	0.51	0.10	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.02	0.04	0.07	0.04	0.44	0.14	0.07	0.08	0.46	0.51
s, saturation flow rate [veh/h]	1774	1786	1583	1774	1863	1583	604	3547	1583	1774	1863	1610
c, Capacity [veh/h]	211	213	189	163	171	145	370	1798	803	186	924	799
d1, Uniform Delay [s]	38.62	38.62	35.85	38.87	39.88	38.92	25.80	12.68	11.83	39.37	21.18	22.73
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.48	6.43	0.52	2.08	5.92	2.47	11.33	0.37	0.38	7.12	16.29	40.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.79	0.20	0.47	0.73	0.48	0.72	0.27	0.14	0.79	0.93	1.03
d, Delay for Lane Group [s/veh]	45.10	45.05	36.37	40.94	45.80	41.39	37.13	13.05	12.21	46.49	37.47	63.41
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.91	3.94	0.77	1.67	2.94	1.55	2.94	2.71	1.26	3.48	19.58	24.46
50th-Percentile Queue Length [ft]	97.87	98.41	19.34	41.76	73.53	38.84	73.51	67.83	31.60	86.88	489.44	611.46
95th-Percentile Queue Length [veh]	7.05	7.09	1.39	3.01	5.29	2.80	5.29	4.88	2.27	6.26	26.83	33.41
95th-Percentile Queue Length [ft]	176.16	177.13	34.82	75.16	132.35	69.91	132.31	122.09	56.87	156.38	670.85	835.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.08	45.05	36.37	40.94	45.80	41.39	37.13	13.05	12.21	46.49	39.99	63.41
Movement LOS	D	D	D	D	D	D	D	B	B	D	D	E
d_A, Approach Delay [s/veh]	44.19			43.30			20.34			49.91		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	41.08											
Intersection LOS	D											
Intersection V/C	0.746											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.097

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	398	96	103	220	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	398	96	103	220	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	24	26	55	0	0
Total Analysis Volume [veh/h]	398	96	103	220	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.74	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.32	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	8.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.79		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	54.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.826

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↰↱	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	613	0	0	455	251	105
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	613	0	0	455	251	105
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	0	0	114	63	26
Total Analysis Volume [veh/h]	613	0	0	455	251	105
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.83	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	54.81	11.16
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.95	0.54
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	173.75	13.38
d_A, Approach Delay [s/veh]	0.00		0.00		41.93	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	10.48					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	167.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	400	31	25	677	0	227	25	641	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	400	31	25	677	0	227	25	641	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	100	8	6	169	0	57	6	160	0	0	0
Total Analysis Volume [veh/h]	0	400	31	25	677	0	227	25	641	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	1.05	0.13	0.98	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.27	0.00	0.00	165.04	167.63	54.22	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.34	0.67	0.00	12.42	13.47	14.52	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	33.55	16.77	0.00	310.42	336.67	362.91	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.29			85.57			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	37.82											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	37.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	31	414	1004	244	11	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	414	1004	244	11	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	104	251	61	3	7
Total Analysis Volume [veh/h]	31	414	1004	244	11	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.00	0.09	0.06
d_M, Delay for Movement [s/veh]	11.89	0.00	0.00	0.00	36.97	16.00
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh]	1.93	0.96	0.00	0.00	0.53	0.53
95th-Percentile Queue Length [ft]	48.17	24.09	0.00	0.00	13.26	13.26
d_A, Approach Delay [s/veh]	0.83		0.00		22.07	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	E					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

14.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	37	0	958	44	0	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	0	958	44	0	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	240	11	0	6
Total Analysis Volume [veh/h]	37	0	958	44	0	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.13	4.71	4.58	0.07
95th-Percentile Queue Length [ft]	3.36	117.81	114.40	1.75
Approach Delay [s/veh]	7.37	14.91		6.50
Approach LOS	A	B		A
Intersection Delay [s/veh]	14.46			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**



Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

14.3
B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	86	9	3	101	0	2	0	0	0	0
Total Analysis Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.40	1.34	4.55	
95th-Percentile Queue Length [ft]	34.89	33.59	113.64	
Approach Delay [s/veh]	11.30		17.38	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	14.32			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	184	0	5	74	0	64	23	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	0	5	74	0	64	23	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	0	1	19	0	16	6	70
Total Analysis Volume [veh/h]	184	0	5	74	0	64	23	281
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.16	0.66	2.84
95th-Percentile Queue Length [ft]	54.12	16.57	70.95
Approach Delay [s/veh]	13.30	14.77	
Approach LOS	B	B	
Intersection Delay [s/veh]	14.32		
Intersection LOS	B		



Intersection Level Of Service Report

Intersection 29: US 101 SB On-ramp & Sunset

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 79.2
 Level Of Service: F
 Volume to Capacity (v/c): 0.597

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1657	474	64	2505
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1657	474	64	2505
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	414	119	16	626
Total Analysis Volume [veh/h]	0	0	1657	474	64	2505
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.60	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	79.18	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.89	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	72.32	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.97	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.08					
Intersection LOS	F					

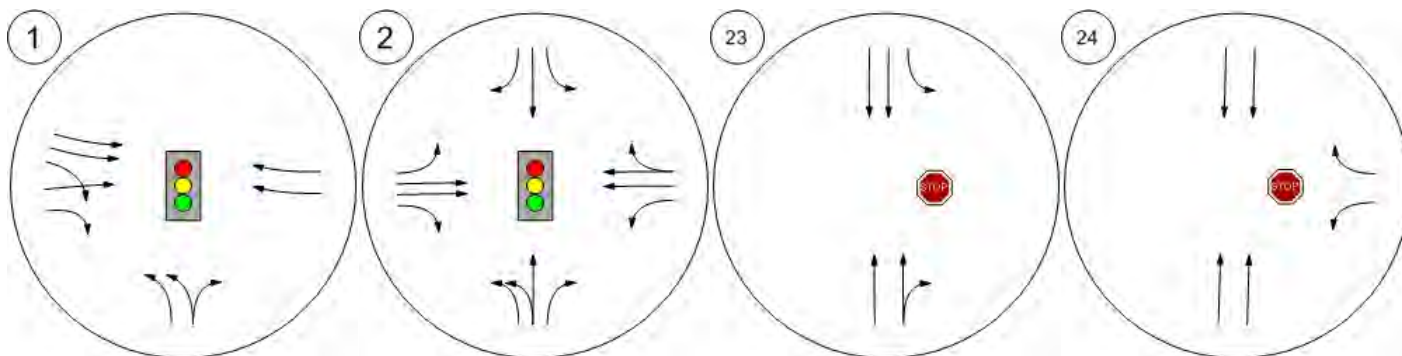
Study Intersections



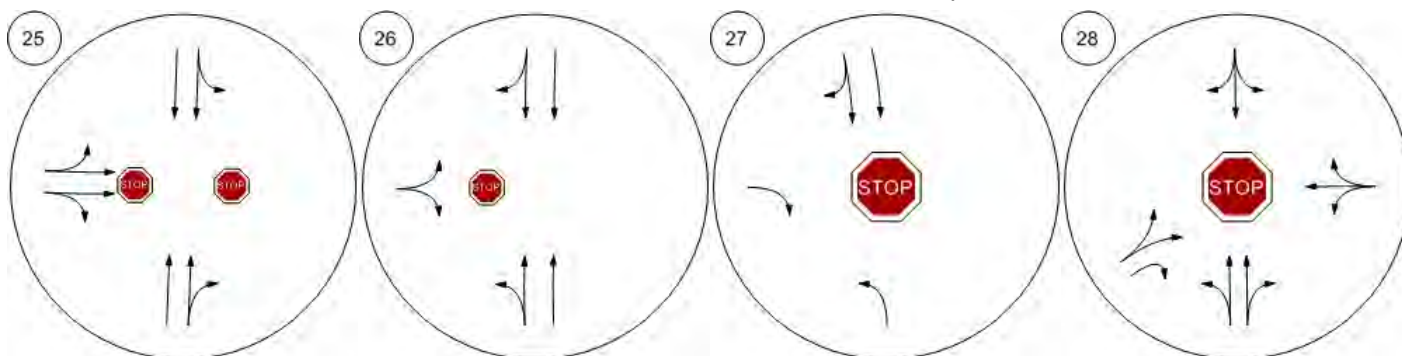
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



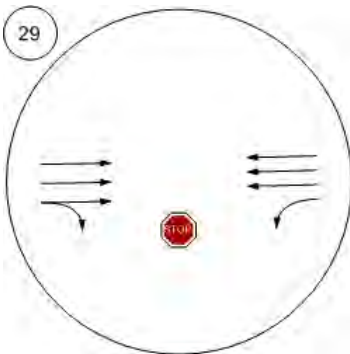
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



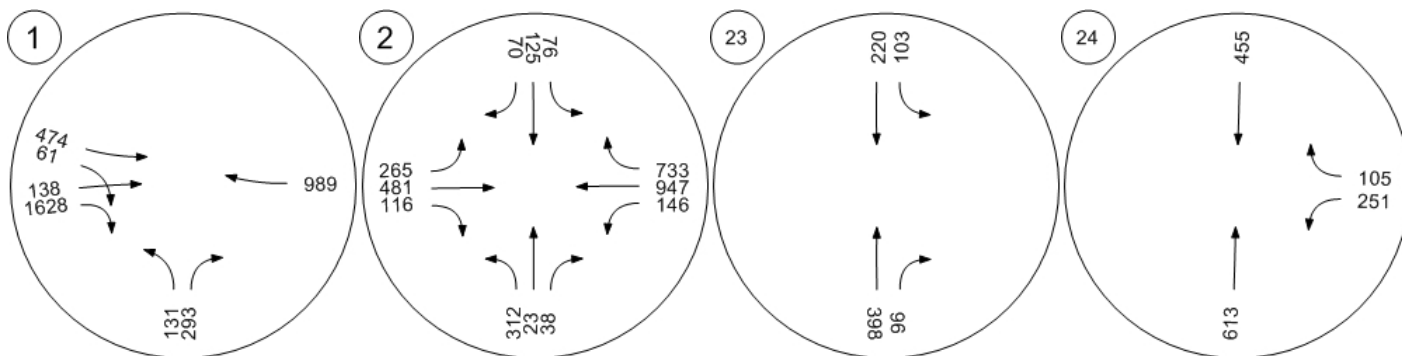
US 101 SB On-ramp & Suns



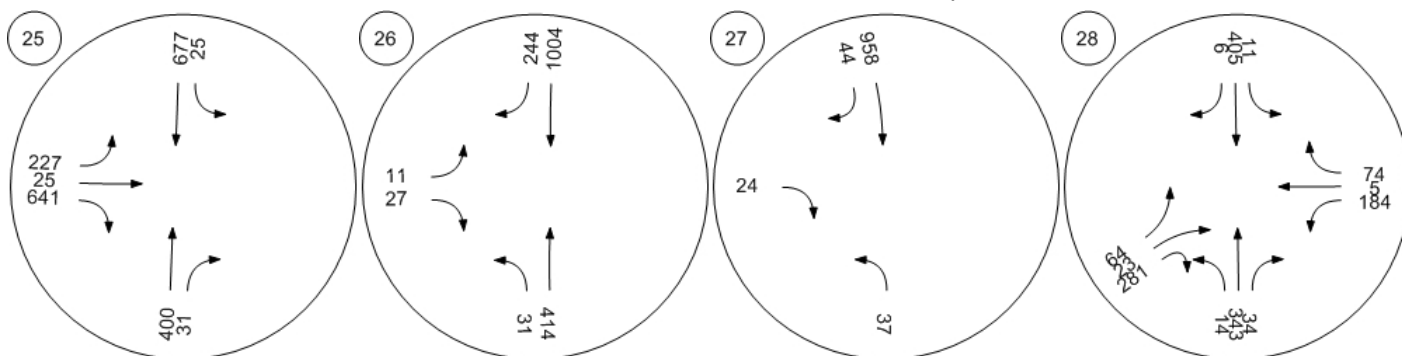
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



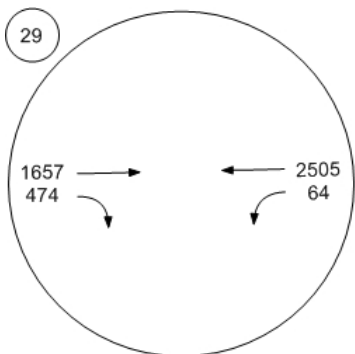
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



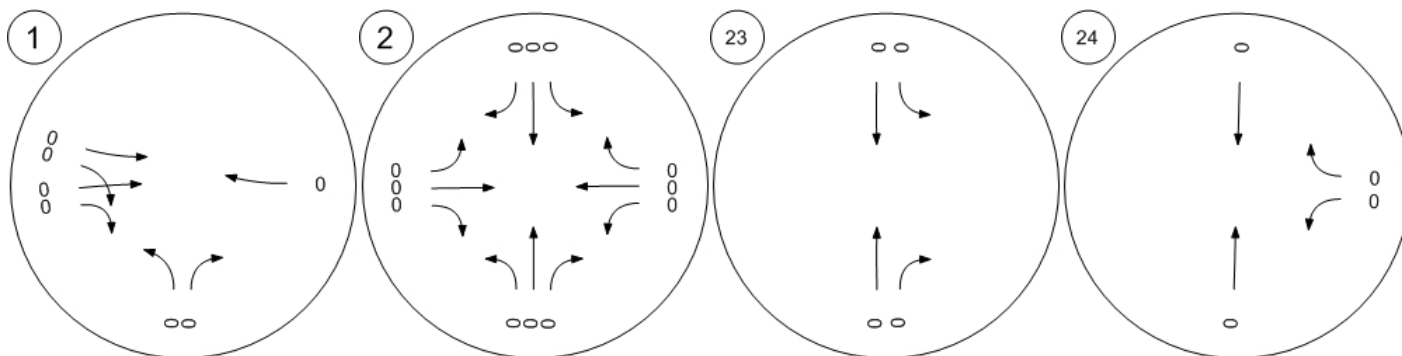
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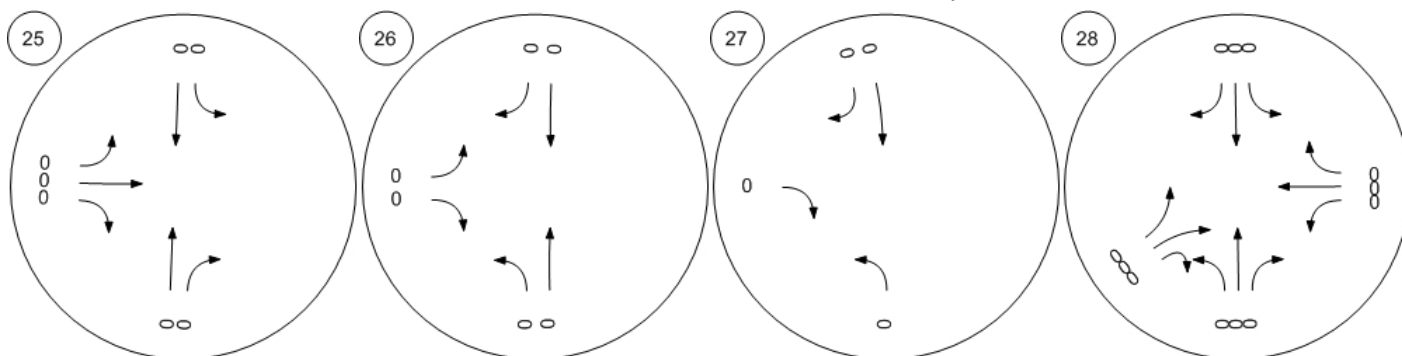
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



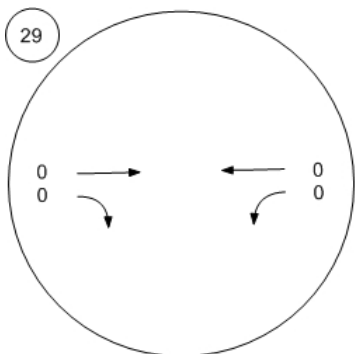
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



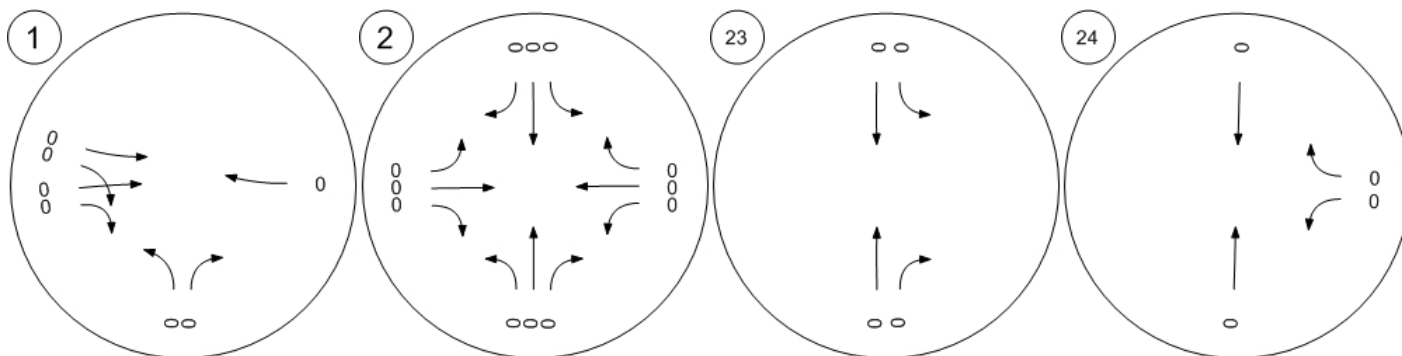
US 101 SB On-ramp & Suns



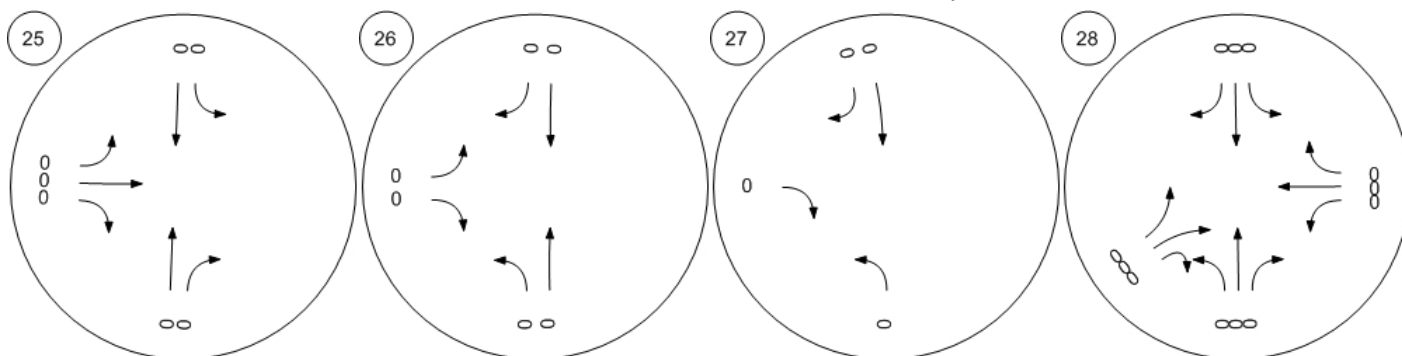
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



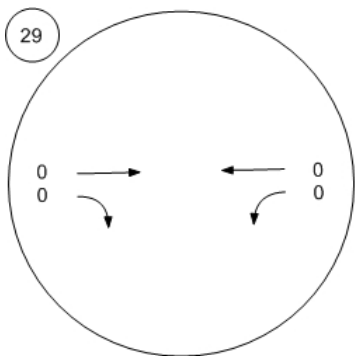
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



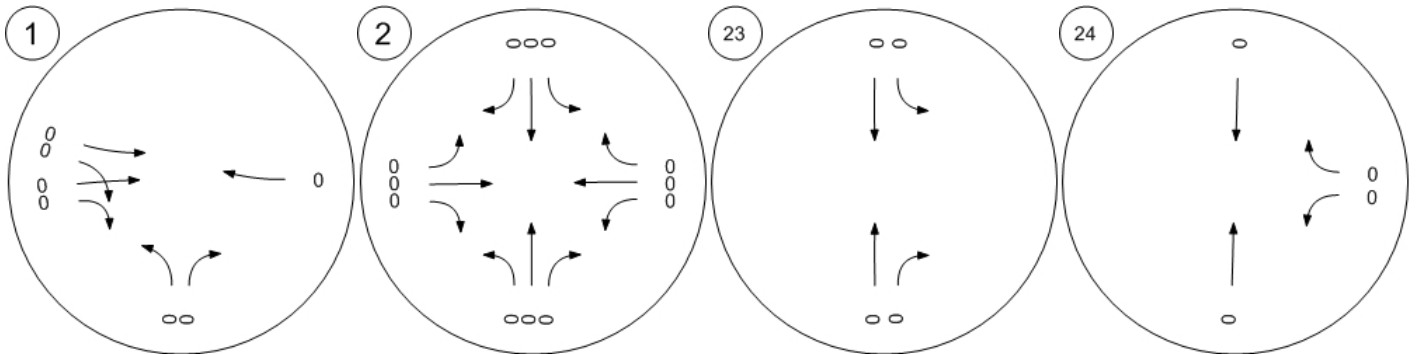
US 101 SB On-ramp & Suns



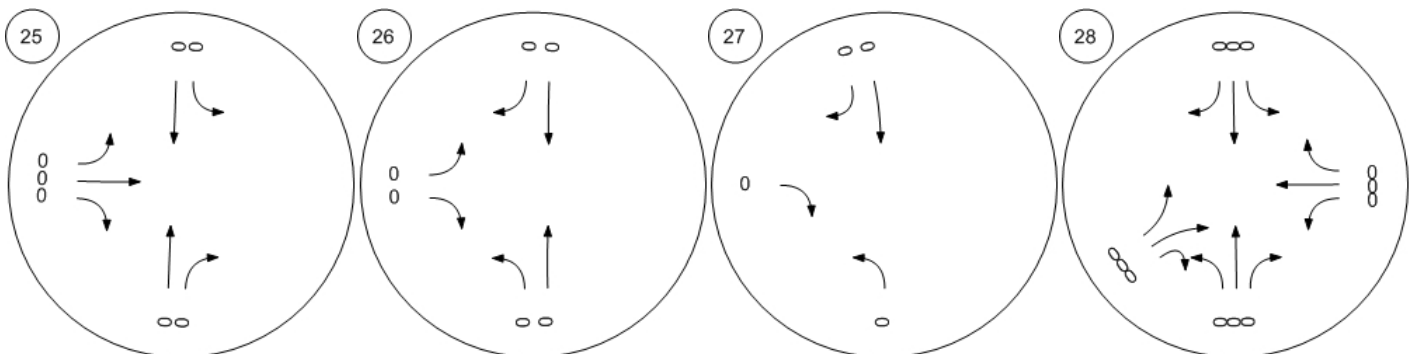
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



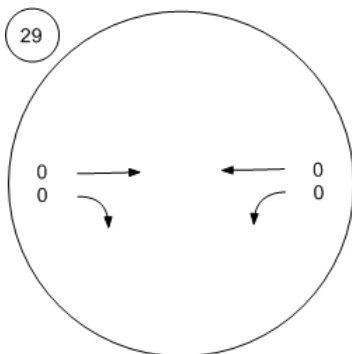
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



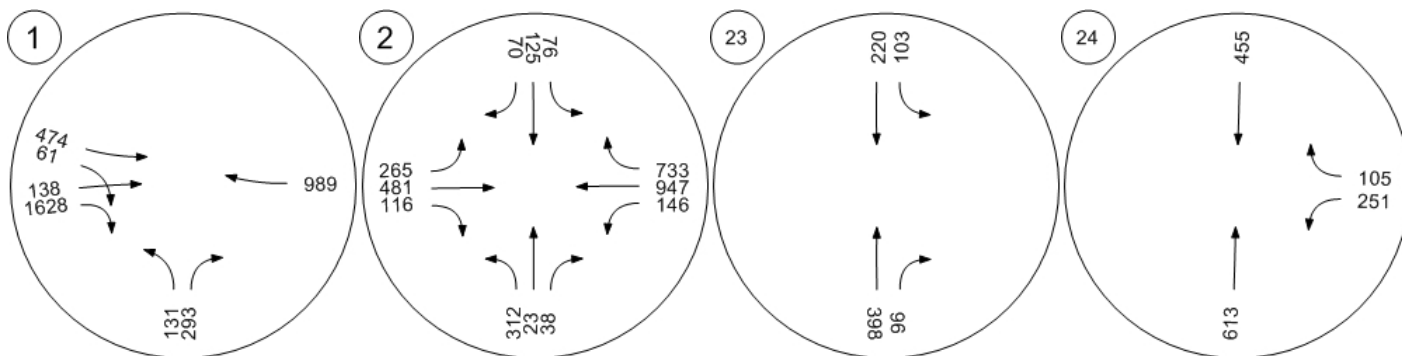
US 101 SB On-ramp & Suns



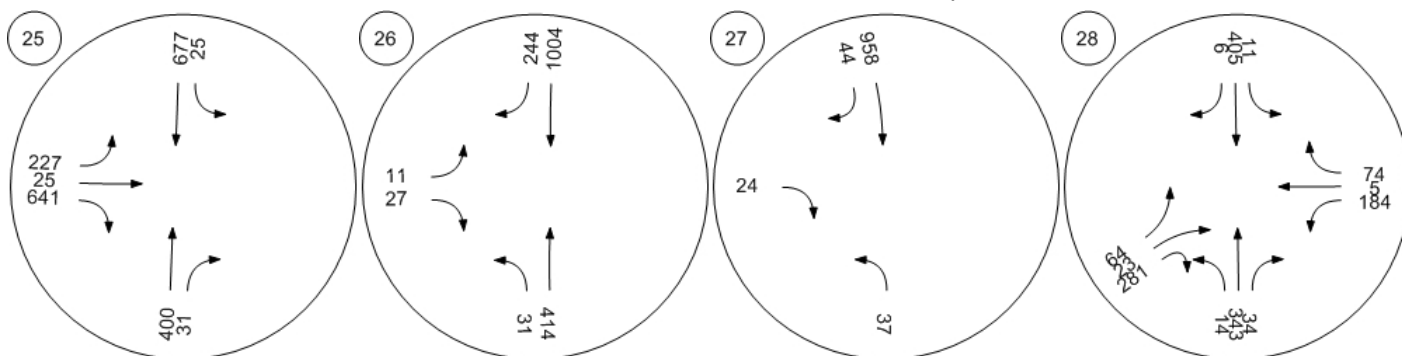
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



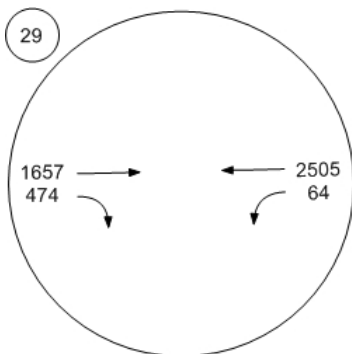
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



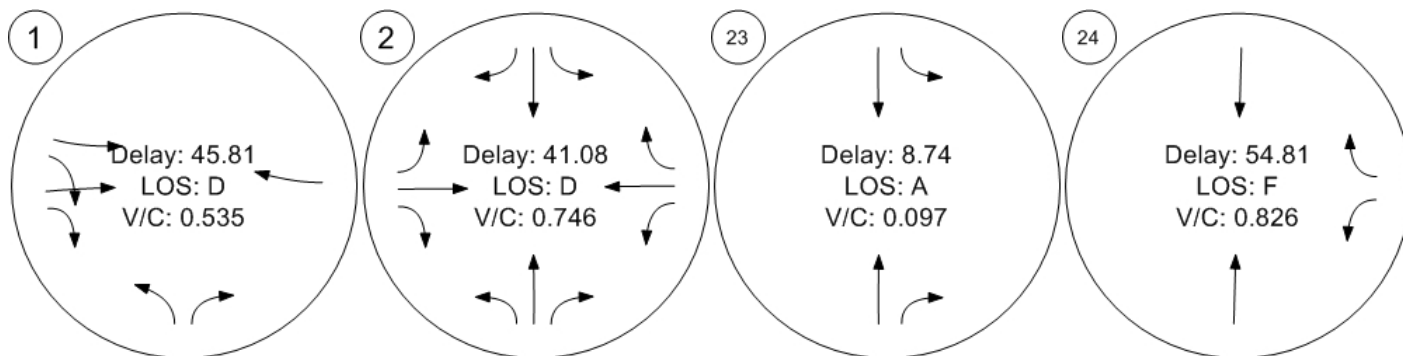
US 101 SB On-ramp & Suns



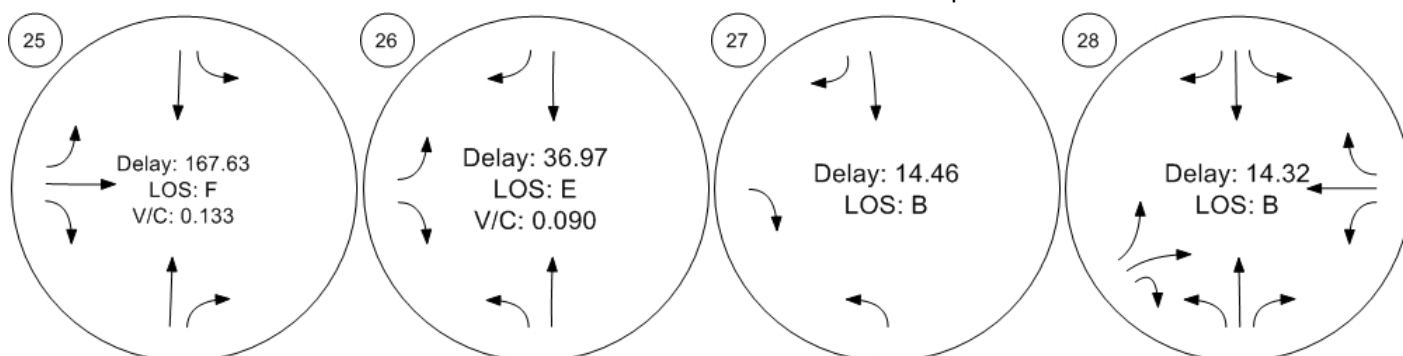
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

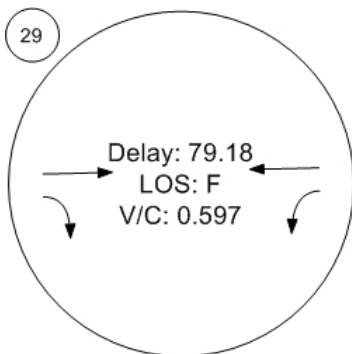


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Report File: S:\...\FP2023PM.pdf

Scenario 8: FP 2023 PM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.491	20.5	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	0.785	42.5	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.128	10.7	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.874	102.0	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.091	207.8	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.406	52.1	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		11.0	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.8	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.570	508.6	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	0	109	169	0	20	0	0	170	0	77	260
Total Analysis Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35	22	22	47	20	82
g / C, Green / Cycle	0.39	0.39	0.25	0.25	0.52	0.22	0.91
(v / s)_i Volume / Saturation Flow Rate	0.27	0.30	0.19	0.05	0.19	0.17	0.66
s, saturation flow rate [veh/h]	1774	1597	3547	1583	3547	1863	1583
c, Capacity [veh/h]	696	627	885	395	1840	419	1443
d1, Uniform Delay [s]	22.79	23.68	31.32	26.74	12.91	32.45	0.52
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.51	8.38	1.39	0.25	0.12	2.56	3.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

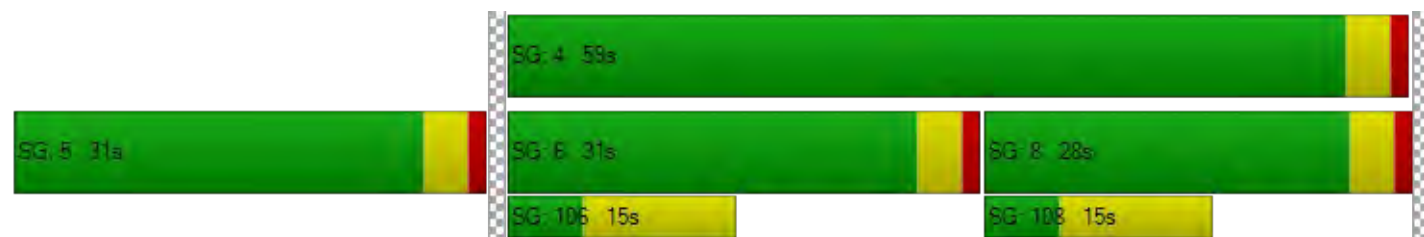
X, volume / capacity	0.69	0.76	0.76	0.21	0.37	0.74	0.72
d, Delay for Lane Group [s/veh]	28.30	32.06	32.71	26.99	13.03	35.01	3.67
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.15	9.79	6.78	1.38	3.89	6.41	1.26
50th-Percentile Queue Length [ft]	228.77	244.77	169.59	34.62	97.31	160.31	31.60
95th-Percentile Queue Length [veh]	14.11	14.92	11.05	2.49	7.01	10.57	2.27
95th-Percentile Queue Length [ft]	352.79	373.06	276.37	62.31	175.16	264.14	56.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.59	0.00	32.06	32.71	0.00	26.99	0.00	0.00	13.03	0.00	35.01	3.67
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	30.17			32.09			13.03			10.84		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.46											
Intersection LOS	C											
Intersection V/C	0.491											

Sequence




Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	548	44	144	51	79	42	306	997	85	107	646	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	548	44	144	51	79	42	306	997	85	107	646	776
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	11	36	13	20	11	77	249	21	27	162	194
Total Analysis Volume [veh/h]	548	44	144	51	79	42	306	997	85	107	646	776
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	47	0	9	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	46	46	7	43	43
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.51	0.51	0.08	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.17	0.17	0.09	0.03	0.04	0.03	0.45	0.28	0.05	0.06	0.35	0.49
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	674	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	111	116	99	369	1826	815	139	893	759
d1, Uniform Delay [s]	37.49	37.48	34.38	40.74	41.32	40.64	27.31	14.74	11.20	40.70	18.67	23.43
k, delay calibration	0.41	0.41	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	46.77	46.09	1.75	2.96	6.76	2.87	19.11	1.18	0.26	8.68	5.06	38.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	1.00	0.55	0.46	0.68	0.42	0.83	0.55	0.10	0.77	0.72	1.02
d, Delay for Lane Group [s/veh]	84.26	83.57	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Lane Group LOS	F	F	D	D	D	D	D	B	B	D	C	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	10.20	10.20	2.97	1.17	1.91	0.97	4.24	6.71	0.89	2.63	11.29	22.90
50th-Percentile Queue Length [ft]	254.99	255.05	74.30	29.26	47.86	24.15	106.01	167.70	22.21	65.77	282.35	572.50
95th-Percentile Queue Length [veh]	15.44	15.44	5.35	2.11	3.45	1.74	7.62	10.96	1.60	4.74	16.81	31.28
95th-Percentile Queue Length [ft]	385.93	386.01	133.75	52.68	86.15	43.47	190.44	273.89	39.98	118.39	420.14	781.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	83.94	83.57	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Movement LOS	F	F	D	D	D	D	D	B	B	D	C	F
d_A, Approach Delay [s/veh]	74.57			45.66			22.37			44.87		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	42.45											
Intersection LOS	D											
Intersection V/C	0.785											

Sequence


Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	796	152	92	139	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	796	152	92	139	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	199	38	23	35	0	0
Total Analysis Volume [veh/h]	796	152	92	139	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.13	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.73	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.44	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	10.93	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.27		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	102.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1158	0	0	310	131	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1158	0	0	310	131	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	290	0	0	78	33	26
Total Analysis Volume [veh/h]	1158	0	0	310	131	102
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.87	0.22
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	101.96	15.09
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	5.93	0.84
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	148.22	21.07
d_A, Approach Delay [s/veh]	0.00		0.00		63.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	8.76					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	207.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.091

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	212	4	3	107	0	72	4	89	0	0	0
Total Analysis Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.00	0.00	1.20	0.09	0.45	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.71	0.00	0.00	199.46	207.84	13.16	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.16	0.58	0.00	15.68	9.00	2.33	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	29.01	14.51	0.00	391.94	225.04	58.13	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.27			99.11			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	33.30											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	52.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.406

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	92	865	626	147	47	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	865	626	147	47	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	216	157	37	12	13
Total Analysis Volume [veh/h]	92	865	626	147	47	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.01	0.00	0.41	0.09
d_M, Delay for Movement [s/veh]	9.82	0.00	0.00	0.00	52.14	26.94
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh]	3.69	1.84	0.00	0.00	2.45	2.45
95th-Percentile Queue Length [ft]	92.23	46.12	0.00	0.00	61.14	61.14
d_A, Approach Delay [s/veh]	0.94		0.00		38.79	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.61					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

11.0
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	118	0	741	3	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	0	741	3	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	0	185	1	0	7
Total Analysis Volume [veh/h]	118	0	741	3	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.47	2.65	2.64	0.09
95th-Percentile Queue Length [ft]	11.87	66.25	66.11	2.16
Approach Delay [s/veh]	7.85	11.61		6.70
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.96			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**



Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

7.8
A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	20	8	1	9	0	4	0	0	0	0
Total Analysis Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.24	0.20	
95th-Percentile Queue Length [ft]	6.58	5.95	4.92	
Approach Delay [s/veh]	7.81		7.55	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.79			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	83	0	2	34	0	15	10	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	2	34	0	15	10	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	1	9	0	4	3	20
Total Analysis Volume [veh/h]	83	0	2	34	0	15	10	78
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.49	0.12	0.31
95th-Percentile Queue Length [ft]	12.32	2.88	7.73
Approach Delay [s/veh]	8.00	7.65	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.79		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	508.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.570

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2290	675	62	2080
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2290	675	62	2080
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	573	169	16	520
Total Analysis Volume [veh/h]	0	0	2290	675	62	2080
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.57	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	508.64	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.43	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	160.73	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.72	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	6.18					
Intersection LOS	F					

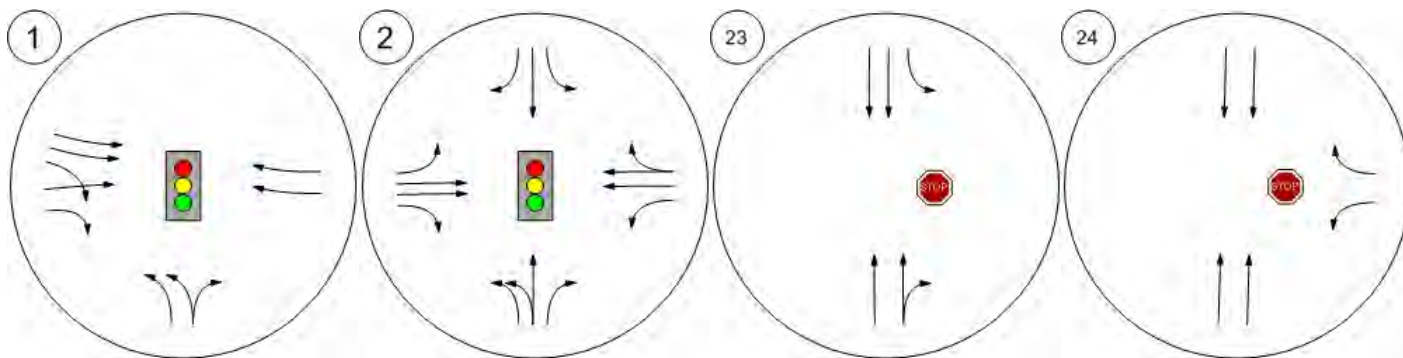
Study Intersections



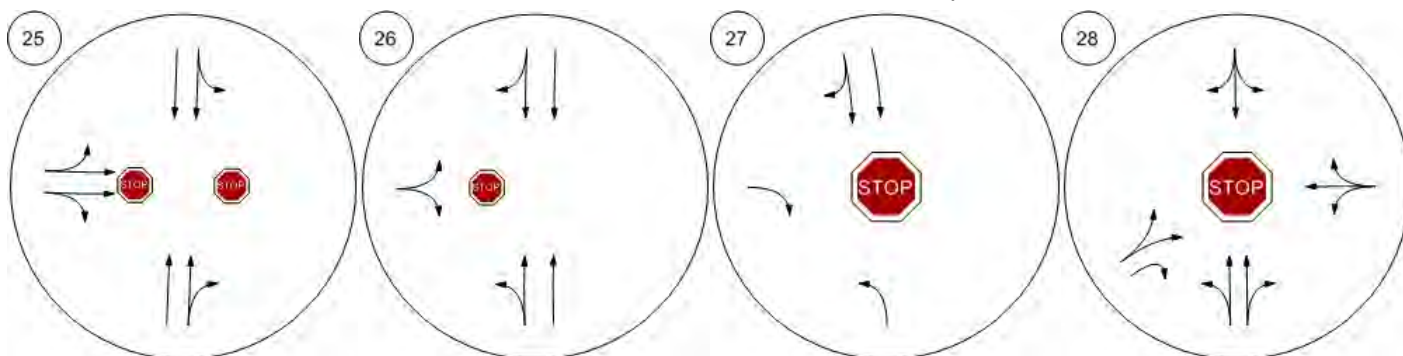
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ram



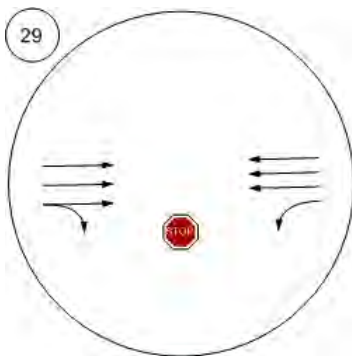
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



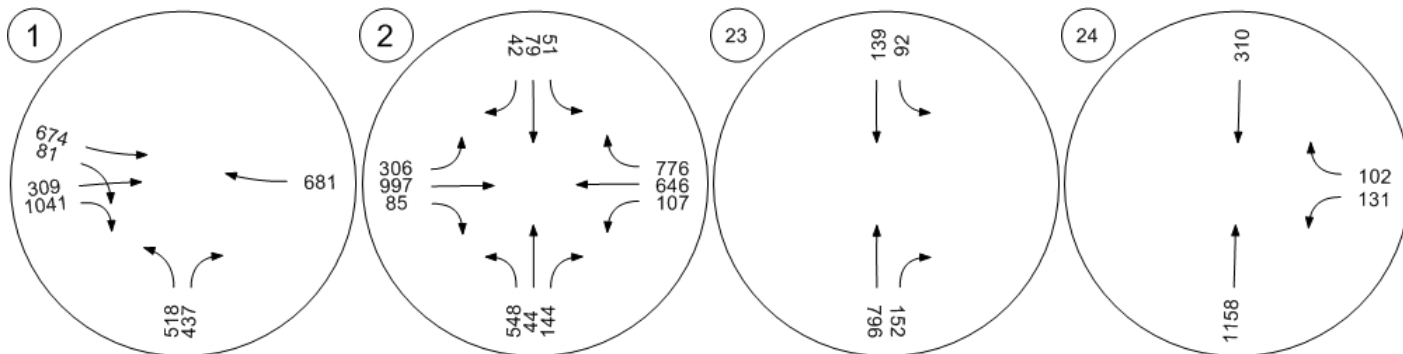
US 101 SB On-ramp & Suns



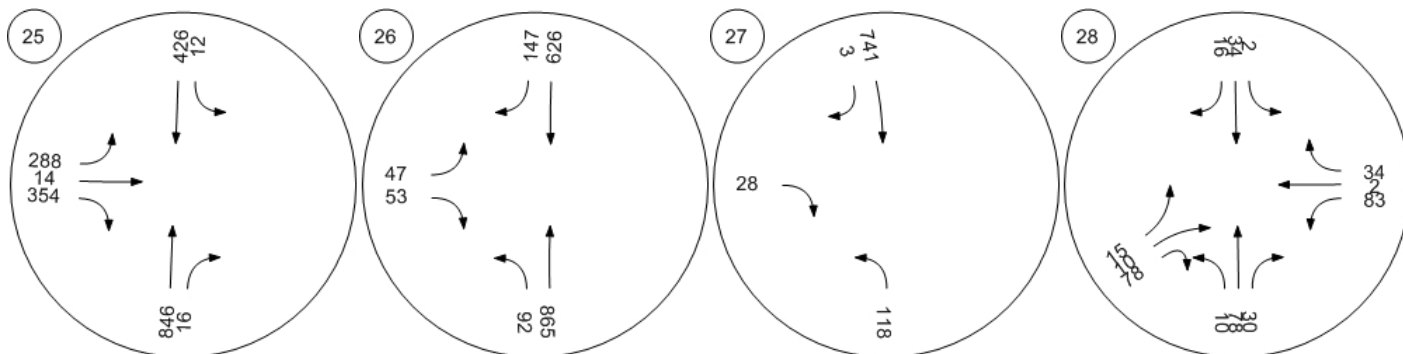
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



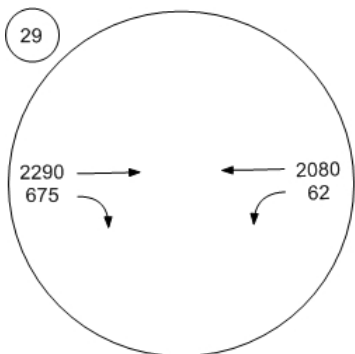
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



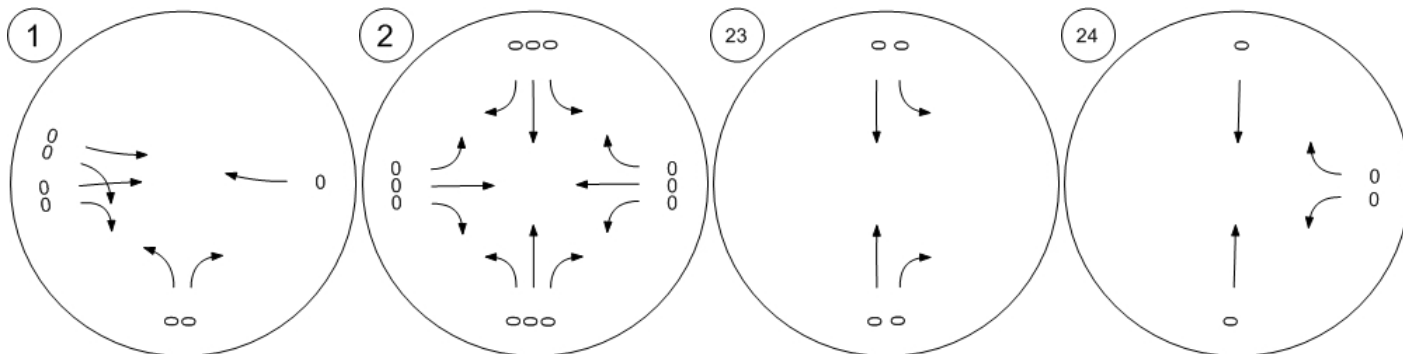
US 101 SB On-ramp & Suns



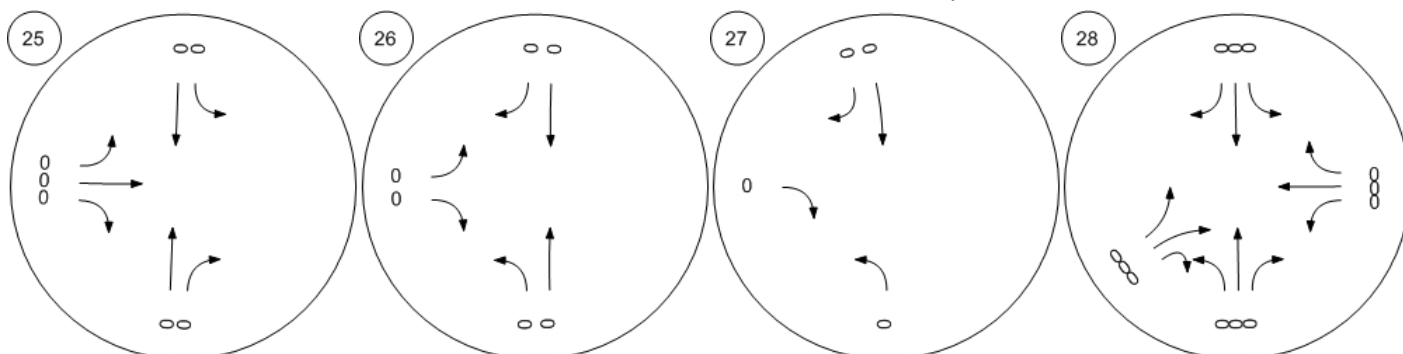
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



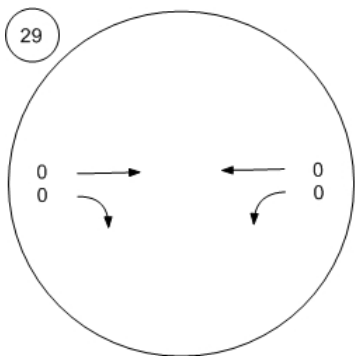
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



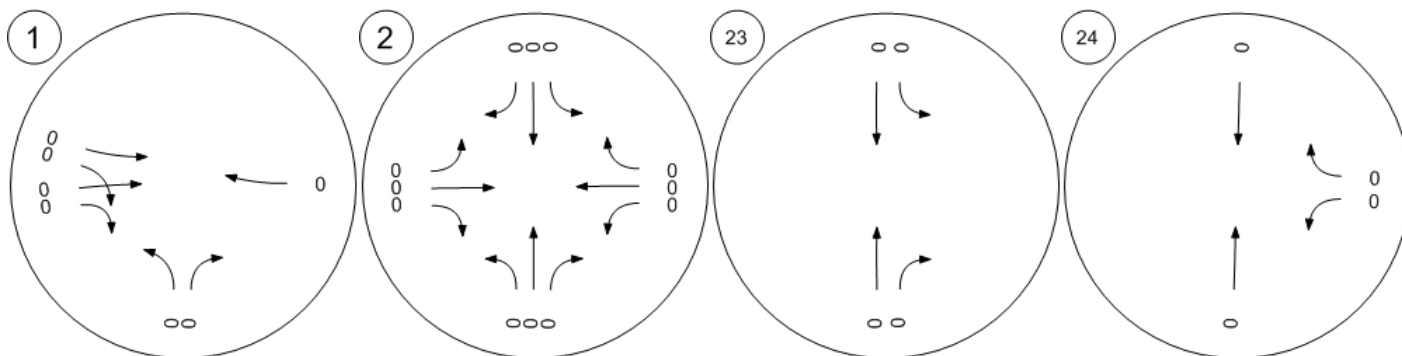
US 101 SB On-ramp & Suns



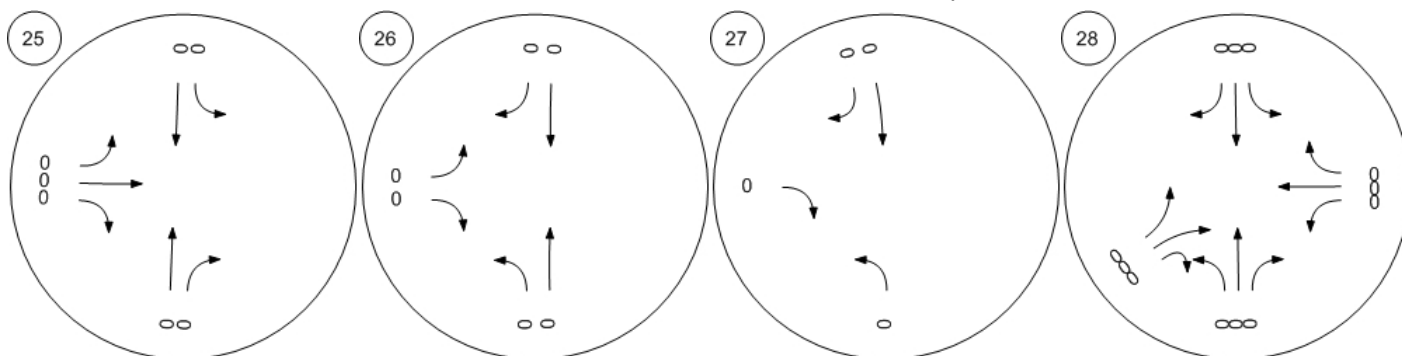
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



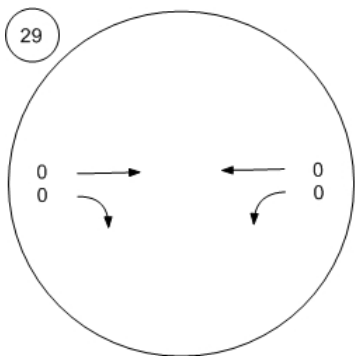
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



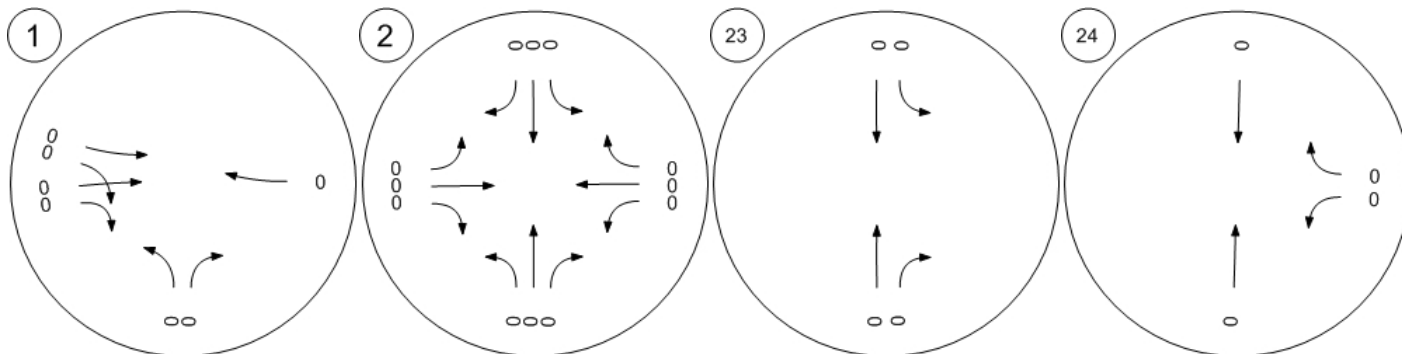
US 101 SB On-ramp & Suns



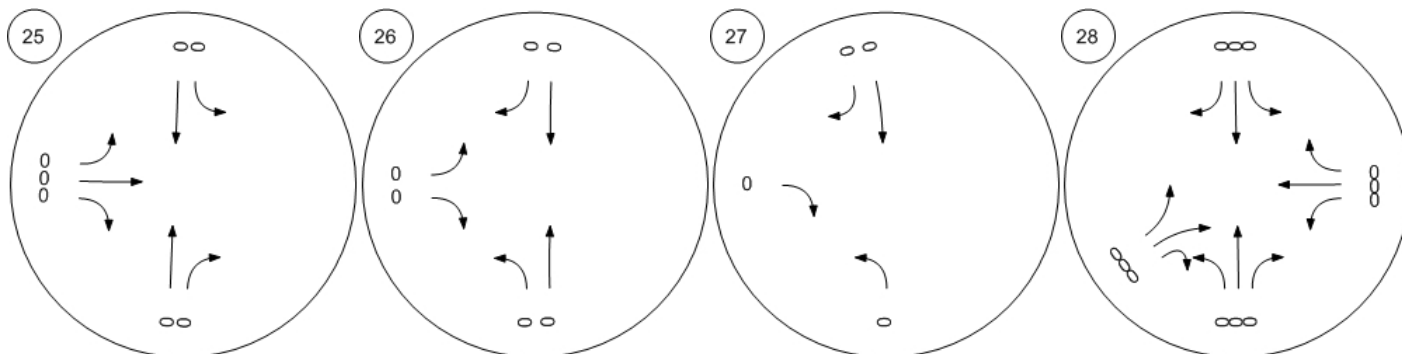
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



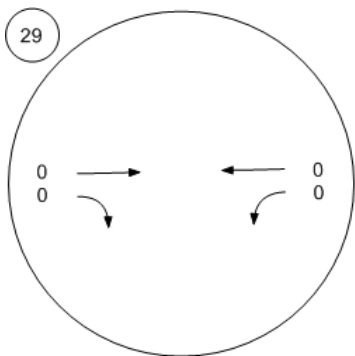
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



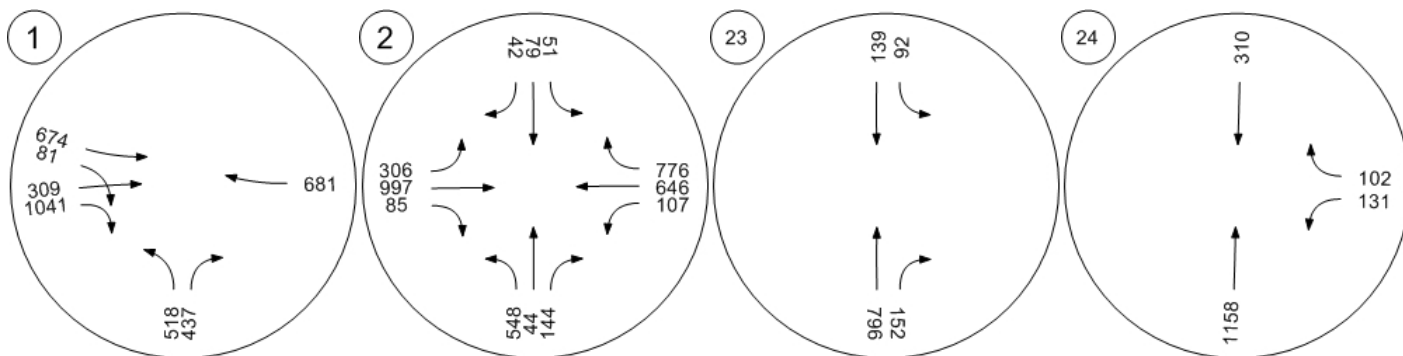
US 101 SB On-ramp & Suns



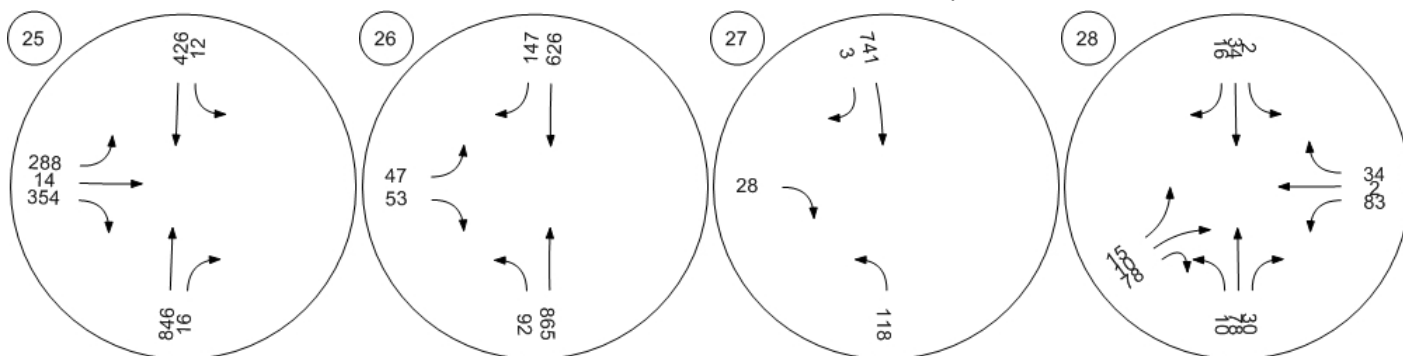
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



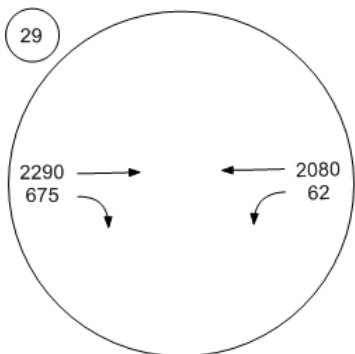
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



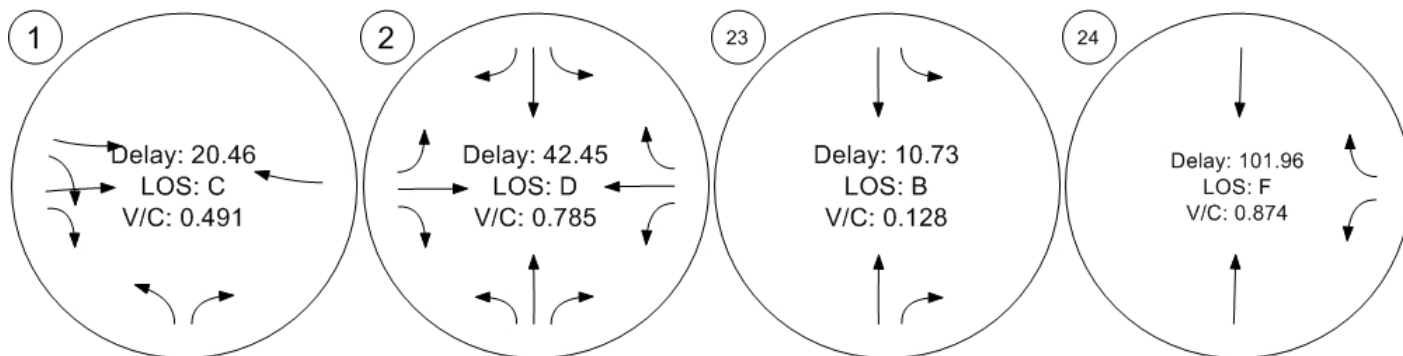
US 101 SB On-ramp & Suns



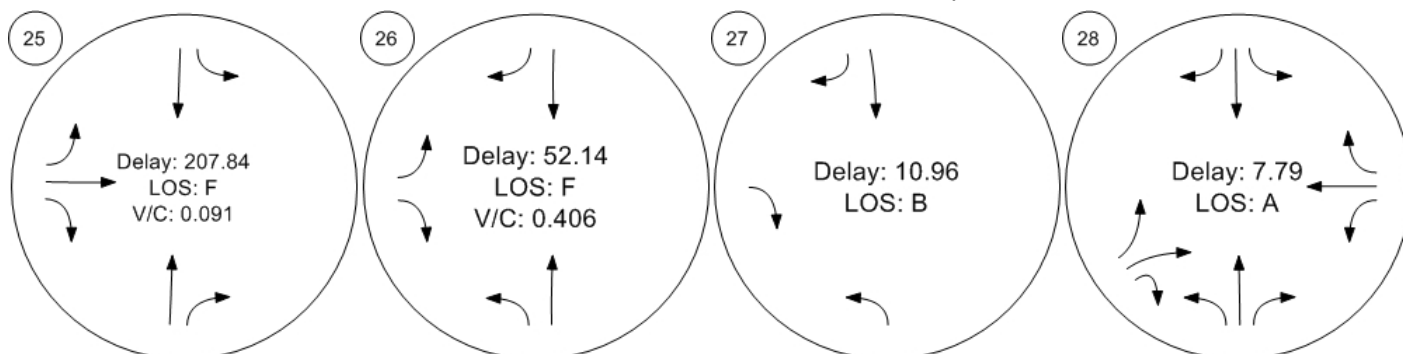
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

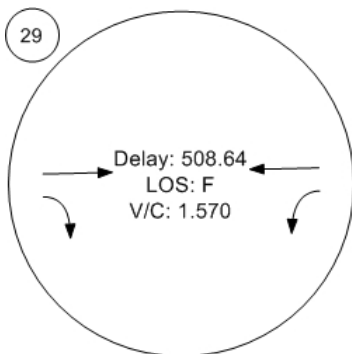


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro
Report File: S:\...\FB2035AM.pdf

Scenario 9: FB 2035 AM
5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.707	89.3	F
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	1.161	86.0	F
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.135	9.6	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	1.382	233.8	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.221	480.5	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.161	60.3	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		18.2	C
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		18.6	C
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.742	530.9	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	89.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	162	0	374	612	0	87	0	0	1148	0	155	1935
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	0	374	612	0	87	0	0	1148	0	155	1935
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	0	94	153	0	22	0	0	287	0	39	484
Total Analysis Volume [veh/h]	162	0	374	612	0	87	0	0	1148	0	155	1935
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.17	0.17	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.09	0.24	0.17	0.05	0.32	0.08	1.22
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	846	592	264	1336	308	1443
d1, Uniform Delay [s]	10.73	12.76	37.50	33.06	25.86	34.20	3.27
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	1.67	26.89	0.72	1.73	1.27	158.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.44	1.03	0.33	0.86	0.50	1.34
d, Delay for Lane Group [s/veh]	11.12	14.44	64.39	33.78	27.60	35.47	161.62
Lane Group LOS	B	B	F	C	C	D	F
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.67	4.69	8.58	1.71	11.09	3.15	63.45
50th-Percentile Queue Length [ft]	41.64	117.14	214.54	42.63	277.29	78.67	1586.36
95th-Percentile Queue Length [veh]	3.00	8.24	13.60	3.07	16.55	5.66	97.09
95th-Percentile Queue Length [ft]	74.96	205.89	340.00	76.74	413.84	141.61	2427.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.12	0.00	14.44	64.39	0.00	33.78	0.00	0.00	27.60	0.00	35.47	161.62
Movement LOS	B		B	F		C			C		D	F
d_A, Approach Delay [s/veh]	13.43			60.58			27.60			152.26		
Approach LOS	B			E			C			F		
d_I, Intersection Delay [s/veh]	89.30											
Intersection LOS	F											
Intersection V/C	0.707											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	86.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.161

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	408	28	43	86	143	79	381	574	138	165	1113	862
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	408	28	43	86	143	79	381	574	138	165	1113	862
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	102	7	11	22	36	20	95	144	35	41	278	216
Total Analysis Volume [veh/h]	408	28	43	86	143	79	381	574	138	165	1113	862
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	19	0	37	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	9	9	9	56	42	42	10	43	43
g / C, Green / Cycle	0.15	0.15	0.15	0.10	0.10	0.10	0.62	0.46	0.46	0.12	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.03	0.05	0.08	0.05	0.73	0.16	0.09	0.09	0.53	0.61
s, saturation flow rate [veh/h]	1774	1785	1583	1774	1863	1583	519	3547	1583	1774	1863	1614
c, Capacity [veh/h]	258	259	230	177	186	158	336	1637	731	205	893	774
d1, Uniform Delay [s]	37.48	37.48	33.81	38.31	39.49	38.37	35.63	15.57	14.30	38.83	23.43	23.43
k, delay calibration	0.22	0.22	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.10	14.03	0.39	2.04	6.48	2.42	90.04	0.59	0.57	7.26	63.46	134.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.84	0.19	0.48	0.77	0.50	1.13	0.35	0.19	0.81	1.11	1.28
d, Delay for Lane Group [s/veh]	51.58	51.51	34.19	40.35	45.97	40.79	125.67	16.16	14.87	46.09	86.89	157.70
Lane Group LOS	D	D	C	D	D	D	F	B	B	D	F	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	5.59	5.62	0.84	1.87	3.37	1.74	11.14	3.76	1.71	3.91	33.15	43.94
50th-Percentile Queue Length [ft]	139.72	140.44	21.05	46.84	84.35	43.44	278.57	93.90	42.87	97.81	828.72	1098.54
95th-Percentile Queue Length [veh]	9.47	9.50	1.52	3.37	6.07	3.13	18.12	6.76	3.09	7.04	45.94	64.70
95th-Percentile Queue Length [ft]	236.65	237.62	37.89	84.32	151.83	78.19	452.95	169.01	77.17	176.06	1148.58	1617.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.55	51.51	34.19	40.35	45.97	40.79	125.67	16.16	14.87	46.09	94.88	157.70
Movement LOS	D	D	C	D	D	D	F	B	B	D	F	F
d_A, Approach Delay [s/veh]	49.99			43.07			54.17			116.42		
Approach LOS	D			D			D			F		
d_I, Intersection Delay [s/veh]	85.96											
Intersection LOS	F											
Intersection V/C	1.161											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.135

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	506	170	123	248	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	506	170	123	248	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	127	43	31	62	0	0
Total Analysis Volume [veh/h]	506	170	123	248	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.13	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.57	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.47	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	11.65	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.17		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.12					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	233.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.382

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	723	0	0	519	340	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	723	0	0	519	340	132
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	0	0	130	85	33
Total Analysis Volume [veh/h]	723	0	0	519	340	132
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	1.38	0.21
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	233.84	12.15
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	18.60	0.78
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	464.91	19.43
d_A, Approach Delay [s/veh]	0.00		0.00		171.84	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	47.32					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	480.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.221

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	482	35	29	827	0	256	29	790	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	482	35	29	827	0	256	29	790	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	121	9	7	207	0	64	7	198	0	0	0
Total Analysis Volume [veh/h]	0	482	35	29	827	0	256	29	790	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.01	0.00	1.67	0.22	1.34	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.54	0.00	0.00	476.57	480.45	187.09	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	2.03	1.01	0.00	21.74	27.87	34.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	50.69	25.35	0.00	543.42	696.73	850.03	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.29			263.94			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	116.01											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 60.3
 Level Of Service: F
 Volume to Capacity (v/c): 0.161

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	38	498	1180	356	12	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	498	1180	356	12	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	125	295	89	3	9
Total Analysis Volume [veh/h]	38	498	1180	356	12	35
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.01	0.00	0.16	0.10
d_M, Delay for Movement [s/veh]	14.21	0.00	0.00	0.00	60.33	22.48
Movement LOS	B	A	A	A	F	C
95th-Percentile Queue Length [veh]	4.14	2.07	0.00	0.00	1.01	1.01
95th-Percentile Queue Length [ft]	103.57	51.79	0.00	0.00	25.18	25.18
d_A, Approach Delay [s/veh]	1.01		0.00		32.14	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.97					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**


Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

18.2
C

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	43	0	1107	49	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	1107	49	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	277	12	0	7
Total Analysis Volume [veh/h]	43	0	1107	49	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.16	6.76	6.55	0.08
95th-Percentile Queue Length [ft]	3.94	169.09	163.69	2.05
Approach Delay [s/veh]	7.41	18.93		6.52
Approach LOS	A	C		A
Intersection Delay [s/veh]	18.24			
Intersection LOS	C			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 18.6
 Level Of Service: C

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	98	10	3	117	0	2	0	0	0	0
Total Analysis Volume [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.83	1.76	7.15	
95th-Percentile Queue Length [ft]	45.76	44.04	178.66	
Approach Delay [s/veh]	12.72		25.03	0.00
Approach LOS	B		D	A
Intersection Delay [s/veh]	18.57			
Intersection LOS	C			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	207	0	6	84	0	72	26	325
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	0	6	84	0	72	26	325
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	0	2	21	0	18	7	81
Total Analysis Volume [veh/h]	207	0	6	84	0	72	26	325
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.93	0.84	4.40
95th-Percentile Queue Length [ft]	73.37	20.93	110.00
Approach Delay [s/veh]	15.66	19.34	
Approach LOS	C	C	
Intersection Delay [s/veh]	18.57		
Intersection LOS	C		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	530.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.742

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2004	749	89	3347
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2004	749	89	3347
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	501	187	22	837
Total Analysis Volume [veh/h]	0	0	2004	749	89	3347
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.74	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	530.93	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	8.61	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	215.36	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.75	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	7.63					
Intersection LOS	F					

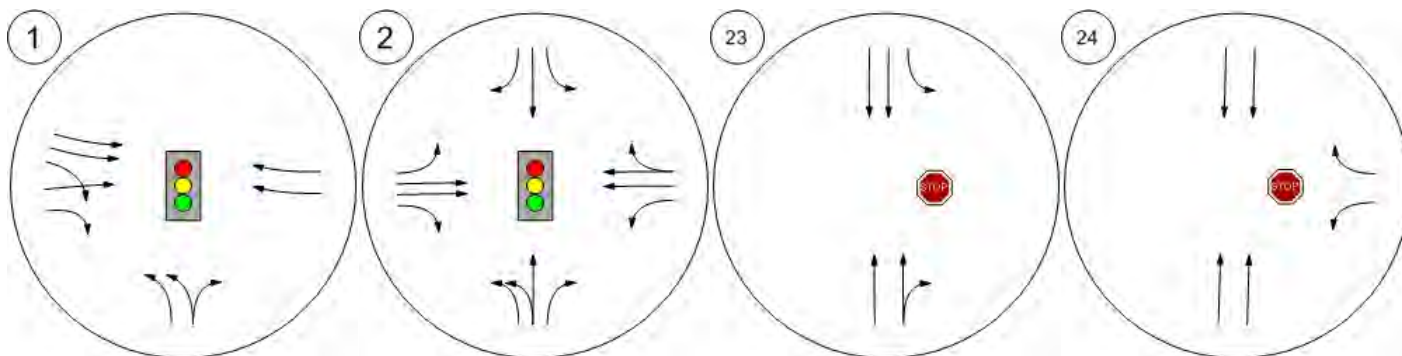
Study Intersections



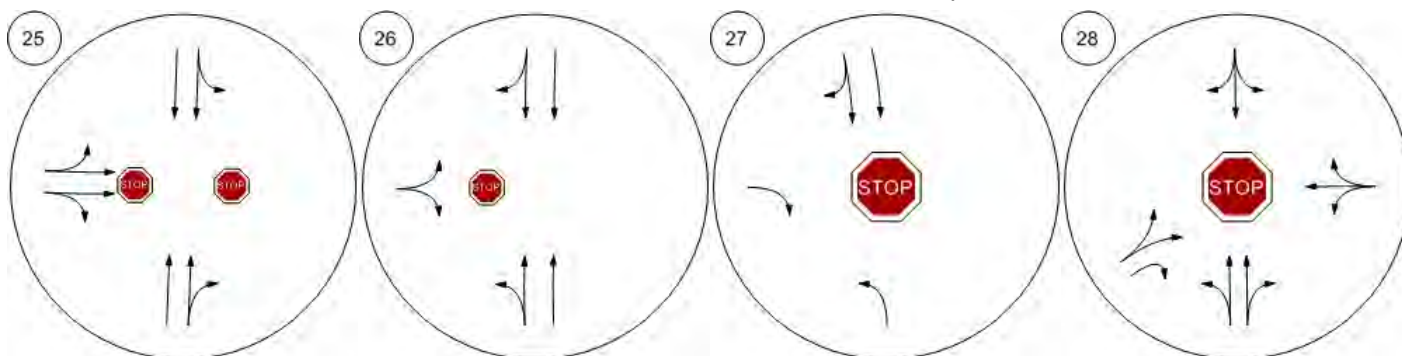
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



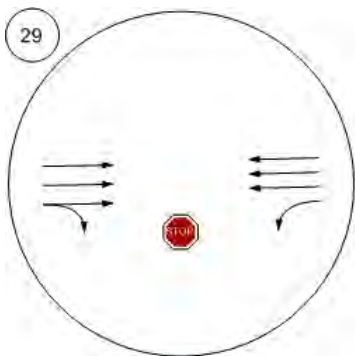
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



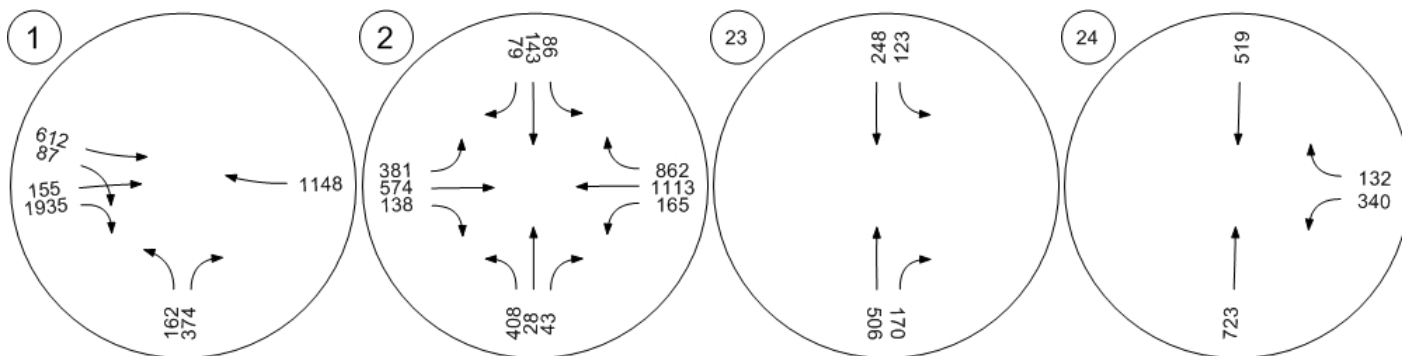
US 101 SB On-ramp & Suns



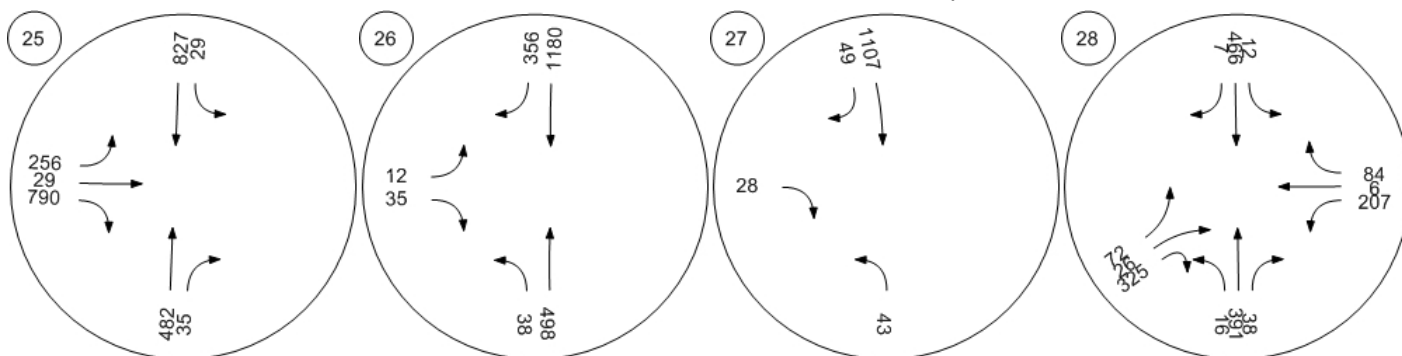
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



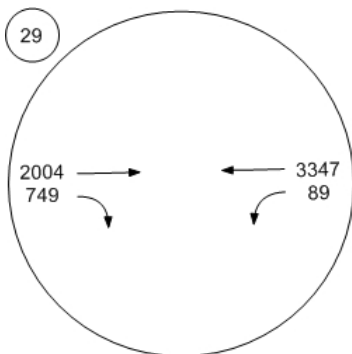
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



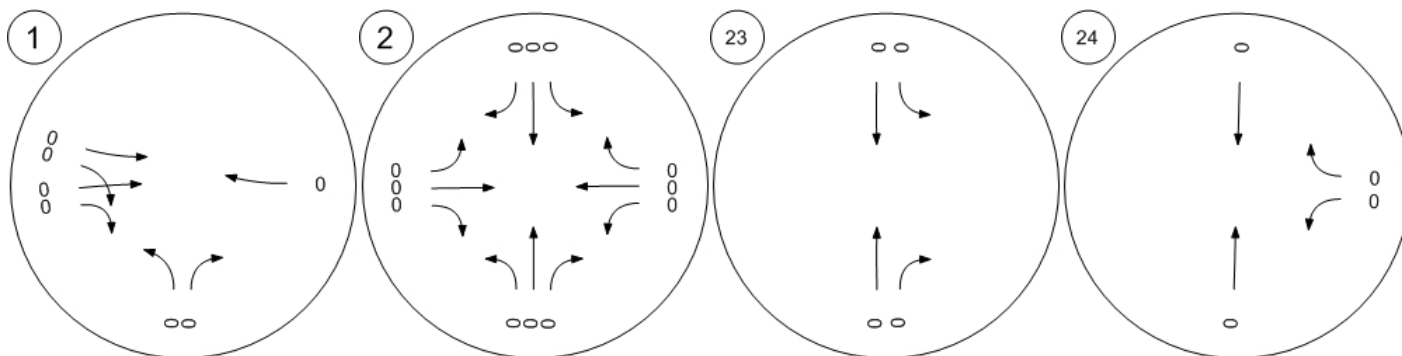
US 101 SB On-ramp & Suns



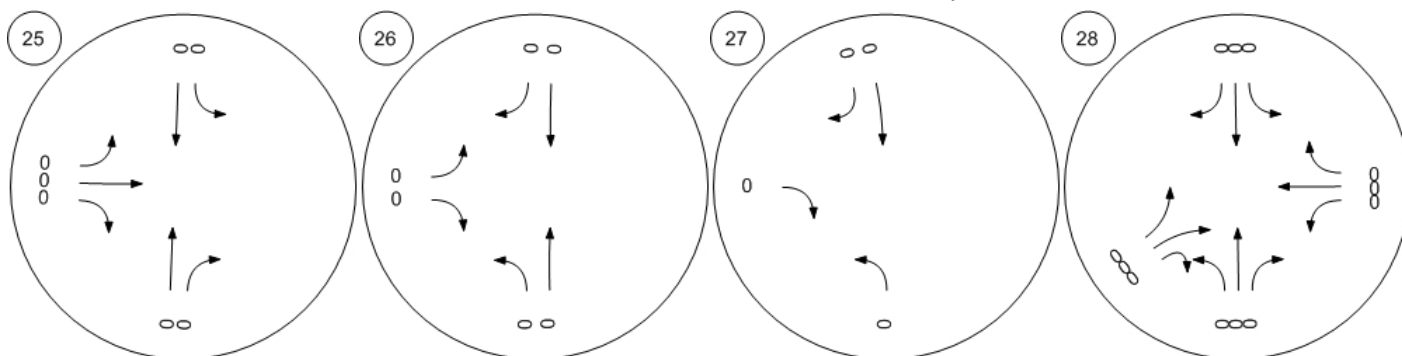
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



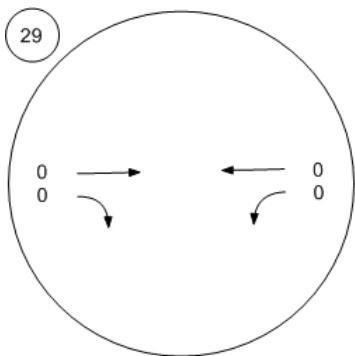
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



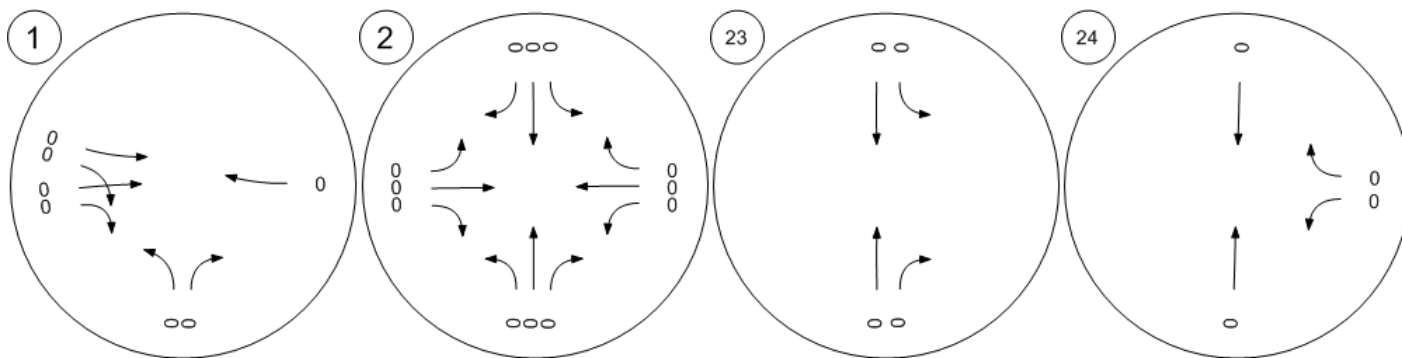
US 101 SB On-ramp & Suns



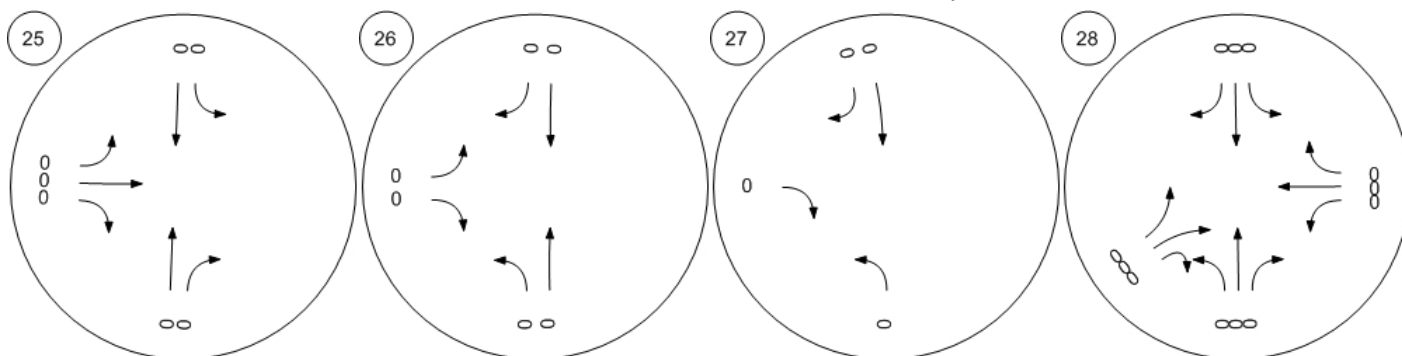
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



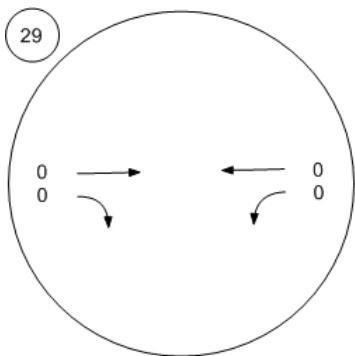
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



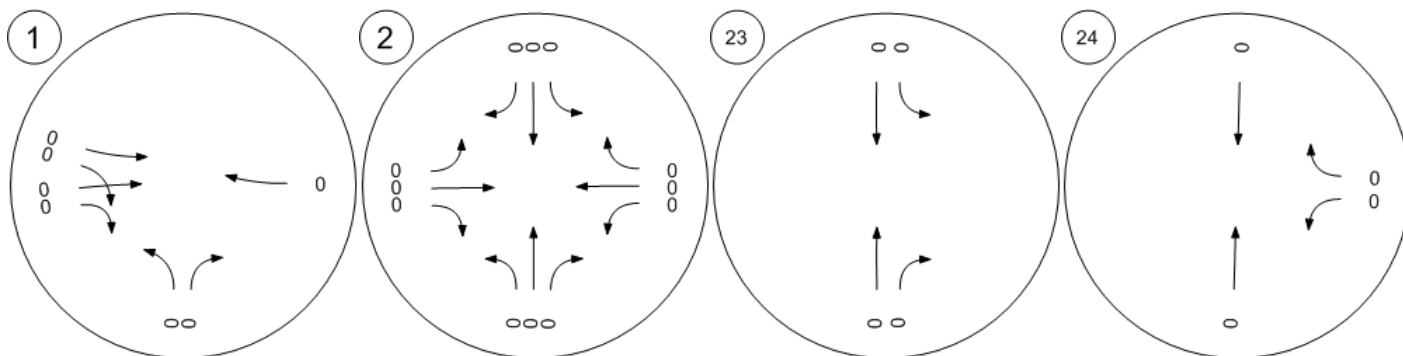
US 101 SB On-ramp & Suns



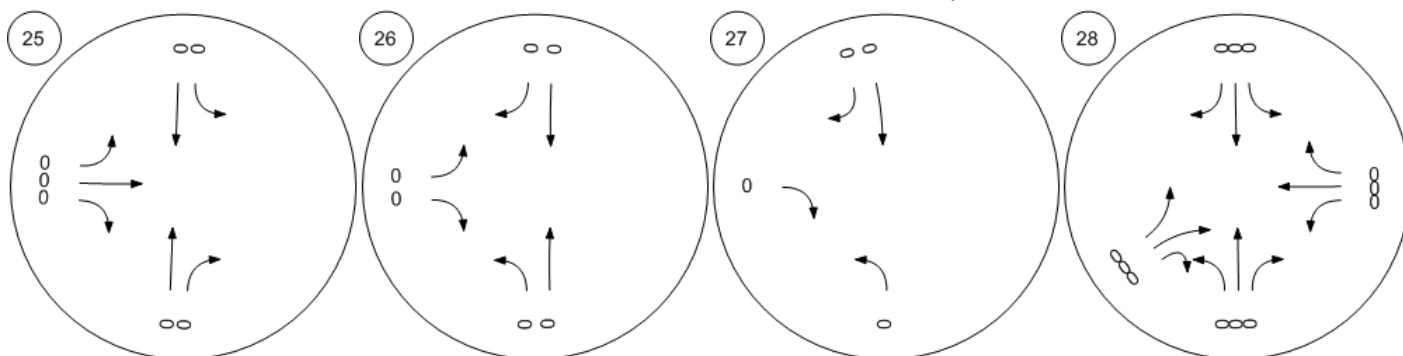
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



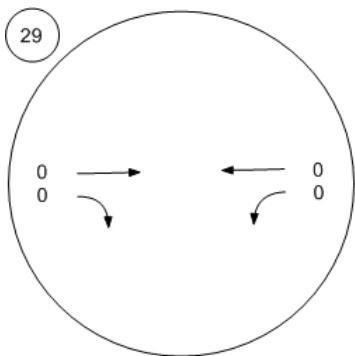
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



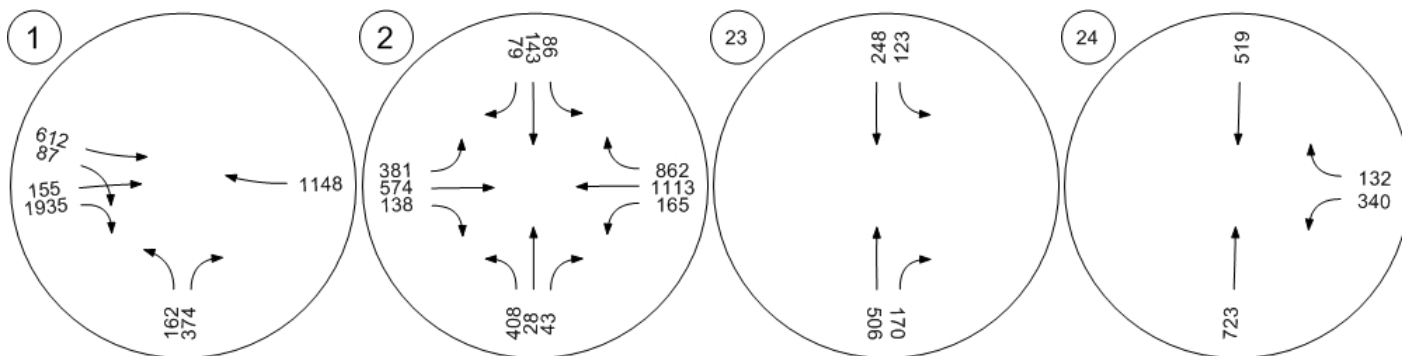
US 101 SB On-ramp & Suns



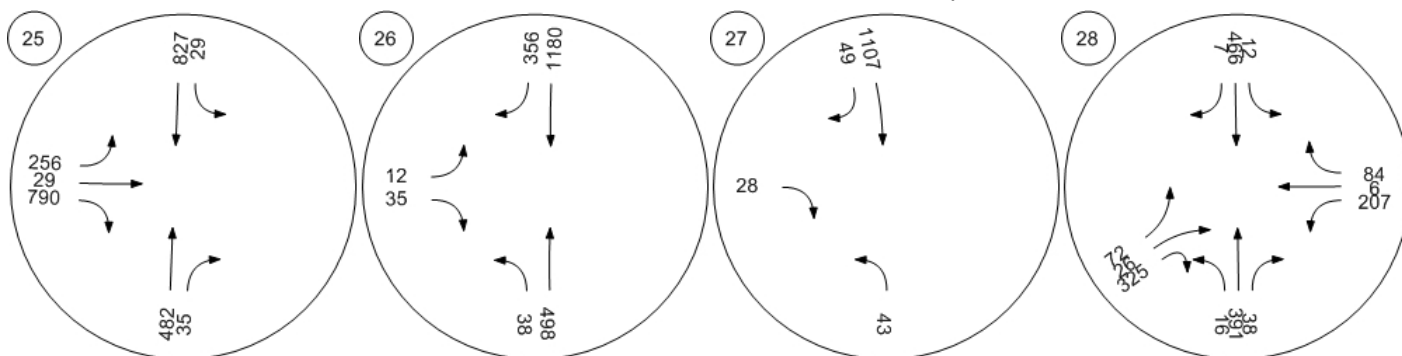
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ramp



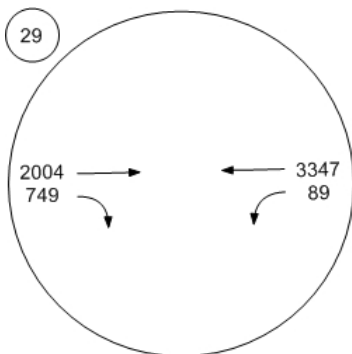
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



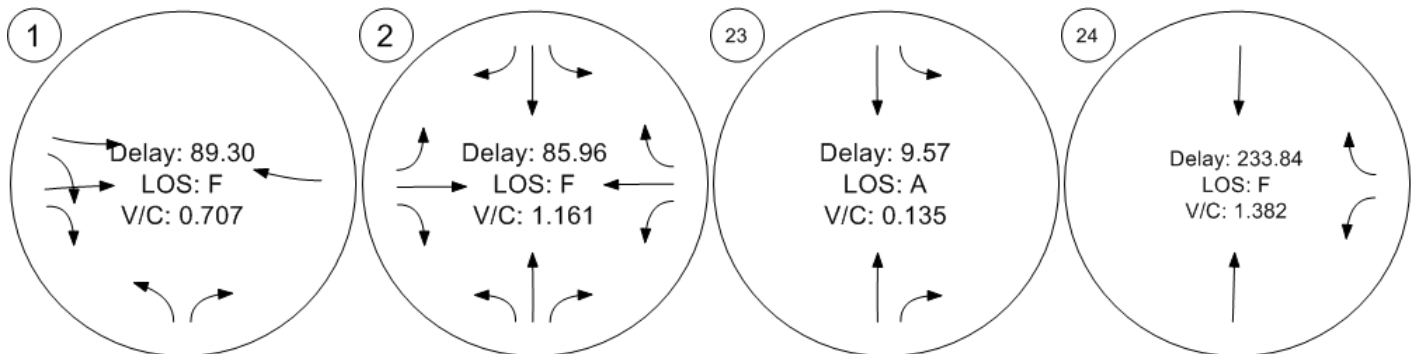
US 101 SB On-ramp & Suns



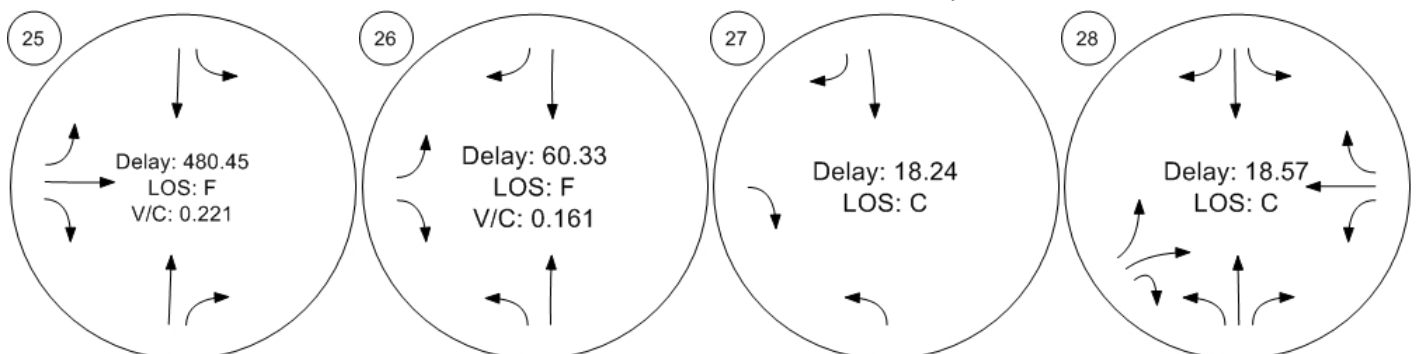
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

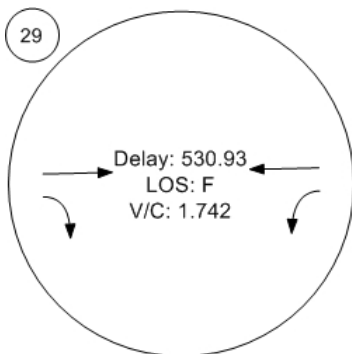


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 11: FP 2035 AM

Report File: S:\...\FP2035AM.pdf

5/19/2017

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.707	90.2	F
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	1.168	87.3	F
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.138	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	1.400	241.8	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.224	490.1	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.163	60.9	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		18.2	C
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		18.6	C
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.813	566.9	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	90.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	162	0	374	613	0	87	0	0	1153	0	155	1941
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	0	374	613	0	87	0	0	1153	0	155	1941
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	0	94	153	0	22	0	0	288	0	39	485
Total Analysis Volume [veh/h]	162	0	374	613	0	87	0	0	1153	0	155	1941
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.17	0.17	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.09	0.24	0.17	0.05	0.33	0.08	1.23
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	846	592	264	1336	308	1443
d1, Uniform Delay [s]	10.73	12.77	37.50	33.06	25.92	34.20	3.27
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	1.67	27.44	0.72	1.79	1.27	160.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.44	1.04	0.33	0.86	0.50	1.35
d, Delay for Lane Group [s/veh]	11.12	14.44	64.94	33.78	27.71	35.47	163.45
Lane Group LOS	B	B	F	C	C	D	F
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.67	4.69	8.63	1.71	11.17	3.15	64.19
50th-Percentile Queue Length [ft]	41.64	117.14	215.67	42.63	279.27	78.67	1604.71
95th-Percentile Queue Length [veh]	3.00	8.24	13.67	3.07	16.65	5.66	98.31
95th-Percentile Queue Length [ft]	74.96	205.89	341.73	76.74	416.31	141.61	2457.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.12	0.00	14.44	64.94	0.00	33.78	0.00	0.00	27.71	0.00	35.47	163.45
Movement LOS	B		B	F		C			C		D	F
d_A, Approach Delay [s/veh]	13.44			61.07			27.71			153.98		
Approach LOS	B			E			C			F		
d_I, Intersection Delay [s/veh]	90.22											
Intersection LOS	F											
Intersection V/C	0.707											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	87.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.168

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	432	28	43	86	143	79	381	574	139	165	1113	862
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	432	28	43	86	143	79	381	574	139	165	1113	862
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	7	11	22	36	20	95	144	35	41	278	216
Total Analysis Volume [veh/h]	432	28	43	86	143	79	381	574	139	165	1113	862
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	19	0	37	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	9	9	9	55	41	41	10	43	43
g / C, Green / Cycle	0.15	0.15	0.15	0.10	0.10	0.10	0.62	0.46	0.46	0.12	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.03	0.05	0.08	0.05	0.75	0.16	0.09	0.09	0.53	0.61
s, saturation flow rate [veh/h]	1774	1784	1583	1774	1863	1583	508	3547	1583	1774	1863	1614
c, Capacity [veh/h]	268	270	240	177	186	158	326	1617	722	205	893	774
d1, Uniform Delay [s]	37.24	37.24	33.33	38.34	39.51	38.40	35.66	15.90	14.61	38.83	23.44	23.44
k, delay calibration	0.25	0.25	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.01	15.93	0.35	2.06	6.58	2.44	103.34	0.61	0.59	7.26	63.54	134.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.85	0.18	0.49	0.77	0.50	1.17	0.36	0.19	0.81	1.11	1.28
d, Delay for Lane Group [s/veh]	53.25	53.17	33.68	40.40	46.09	40.84	139.00	16.52	15.21	46.09	86.98	157.80
Lane Group LOS	D	D	C	D	D	D	F	B	B	D	F	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	6.02	6.05	0.83	1.88	3.38	1.74	12.06	3.81	1.75	3.91	33.16	43.95
50th-Percentile Queue Length [ft]	150.59	151.31	20.86	46.88	84.49	43.47	301.45	95.19	43.81	97.81	829.03	1098.87
95th-Percentile Queue Length [veh]	10.05	10.09	1.50	3.38	6.08	3.13	19.73	6.85	3.15	7.04	45.96	64.72
95th-Percentile Queue Length [ft]	251.21	252.18	37.54	84.38	152.07	78.25	493.18	171.34	78.85	176.06	1149.10	1617.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.21	53.17	33.68	40.40	46.09	40.84	139.00	16.52	15.21	46.09	94.96	157.80
Movement LOS	D	D	C	D	D	D	F	B	B	D	F	F
d_A, Approach Delay [s/veh]	51.54			43.16			59.01			116.51		
Approach LOS	D			D			E			F		
d_I, Intersection Delay [s/veh]	87.29											
Intersection LOS	F											
Intersection V/C	1.168											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.138

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	530	170	123	249	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	530	170	123	249	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	133	43	31	62	0	0
Total Analysis Volume [veh/h]	530	170	123	249	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.14	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.68	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.48	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	11.93	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.20		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	241.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.400

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	729	0	0	521	341	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	729	0	0	521	341	132
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	182	0	0	130	85	33
Total Analysis Volume [veh/h]	729	0	0	521	341	132
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0


Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	1.40	0.21
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	241.84	12.19
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	18.94	0.78
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	473.42	19.54
d_A, Approach Delay [s/veh]	0.00		0.00		177.75	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	48.80					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	490.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.224

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	488	35	29	830	0	256	29	790	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	488	35	29	830	0	256	29	790	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	122	9	7	208	0	64	7	198	0	0	0
Total Analysis Volume [veh/h]	0	488	35	29	830	0	256	29	790	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0


Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.01	0.00	1.69	0.22	1.35	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.56	0.00	0.00	486.15	490.15	188.40	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	2.06	1.03	0.00	21.90	28.02	34.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	51.41	25.70	0.00	547.56	700.43	853.31	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.29			267.45			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	117.12											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	60.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.163

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	38	504	1183	356	12	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	504	1183	356	12	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	126	296	89	3	9
Total Analysis Volume [veh/h]	38	504	1183	356	12	35
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.01	0.01	0.00	0.16	0.10
d_M, Delay for Movement [s/veh]	14.23	0.00	0.00	0.00	60.95	22.62
Movement LOS	B	A	A	A	F	C
95th-Percentile Queue Length [veh]	4.26	2.13	0.00	0.00	1.02	1.02
95th-Percentile Queue Length [ft]	106.49	53.25	0.00	0.00	25.40	25.40
d_A, Approach Delay [s/veh]	1.00		0.00		32.40	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.97					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

18.2
C

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	43	0	1107	49	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	1107	49	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	277	12	0	7
Total Analysis Volume [veh/h]	43	0	1107	49	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	6.76	6.55	0.08
95th-Percentile Queue Length [ft]	3.94	169.09	163.69	2.05
Approach Delay [s/veh]	7.41	18.93		6.52
Approach LOS	A	C		A
Intersection Delay [s/veh]	18.24			
Intersection LOS	C			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**



Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

18.6
C

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	98	10	3	117	0	2	0	0	0	0
Total Analysis Volume [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.83	1.76	7.15	
95th-Percentile Queue Length [ft]	45.76	44.04	178.66	
Approach Delay [s/veh]	12.72		25.03	0.00
Approach LOS	B		D	A
Intersection Delay [s/veh]	18.57			
Intersection LOS	C			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	207	0	6	84	0	72	26	325
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	0	6	84	0	72	26	325
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	0	2	21	0	18	7	81
Total Analysis Volume [veh/h]	207	0	6	84	0	72	26	325
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.93	0.84	4.40
95th-Percentile Queue Length [ft]	73.37	20.93	110.00
Approach Delay [s/veh]	15.66	19.34	
Approach LOS	C	C	
Intersection Delay [s/veh]	18.57		
Intersection LOS	C		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	566.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.813

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2010	776	89	3354
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2010	776	89	3354
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	503	194	22	839
Total Analysis Volume [veh/h]	0	0	2010	776	89	3354
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.81	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	566.88	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	8.79	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	219.70	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.65	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	8.10					
Intersection LOS	F					

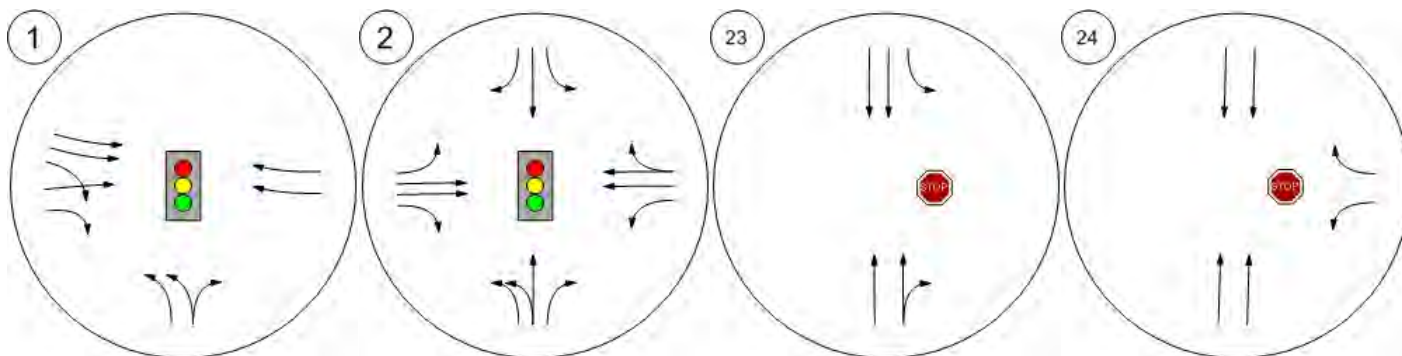
Study Intersections



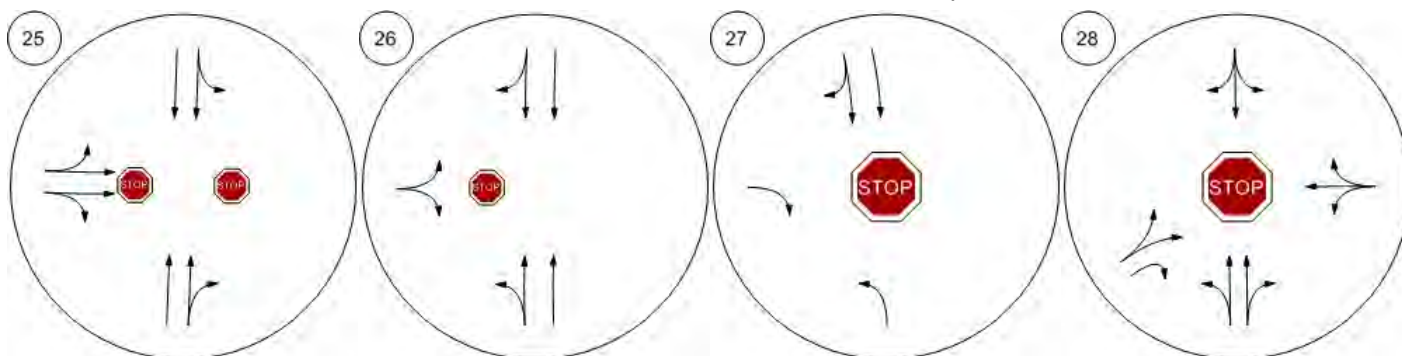
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



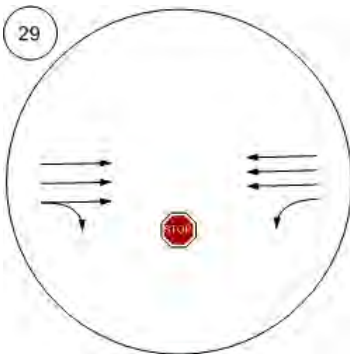
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



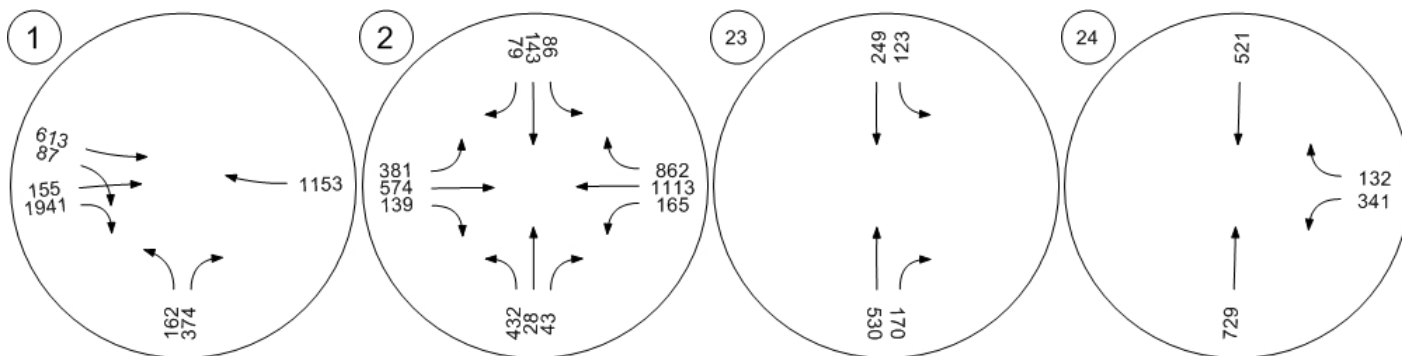
US 101 SB On-ramp & Suns



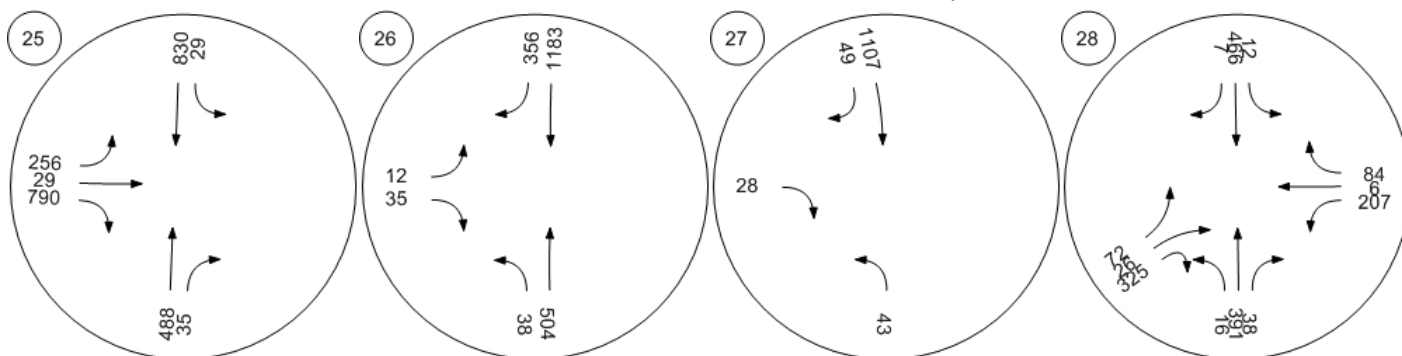
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



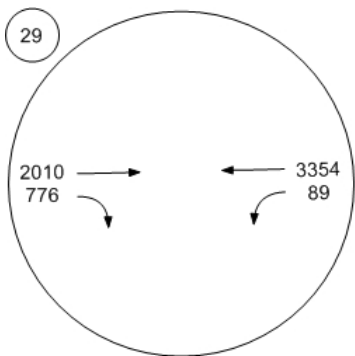
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Traffic Volume - Base Volume



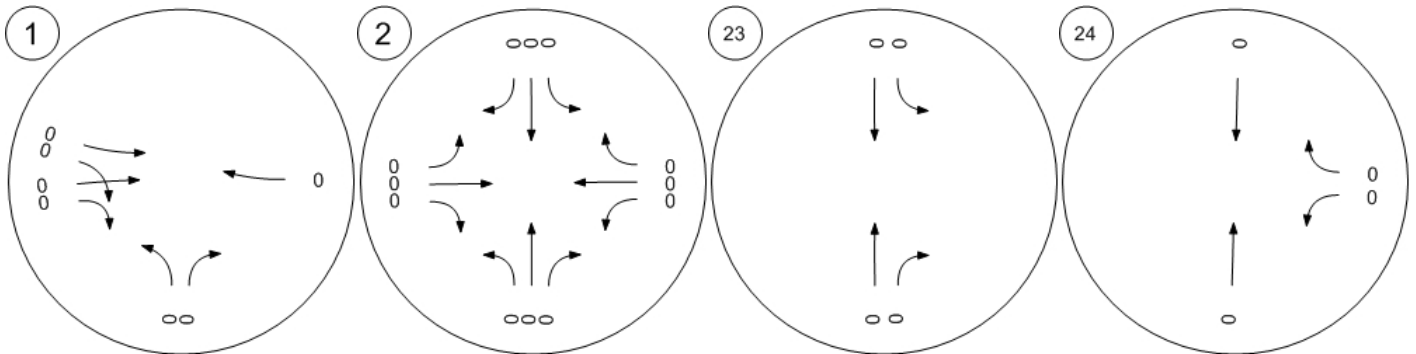
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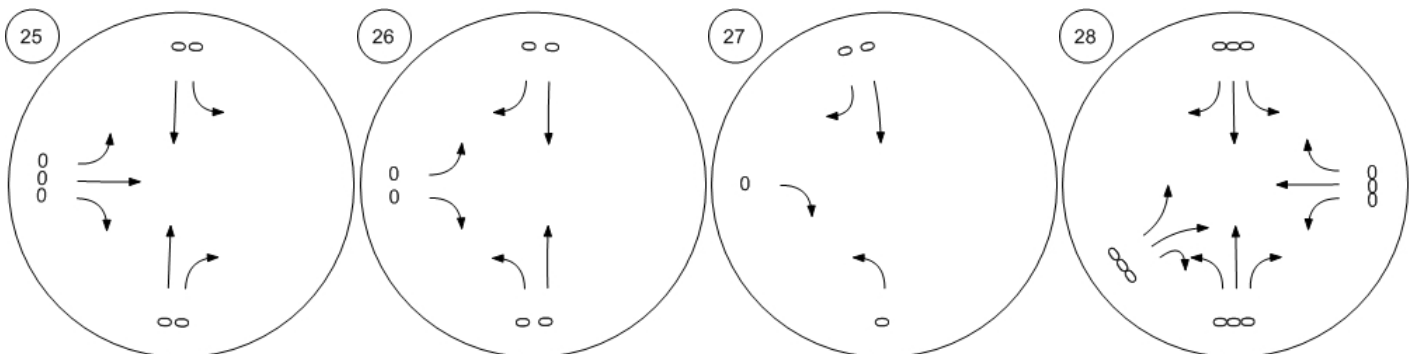
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



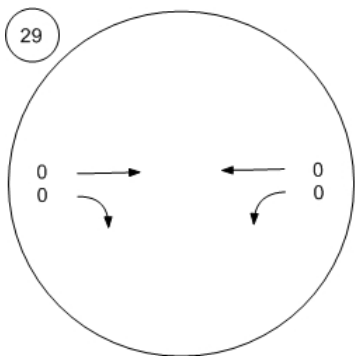
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



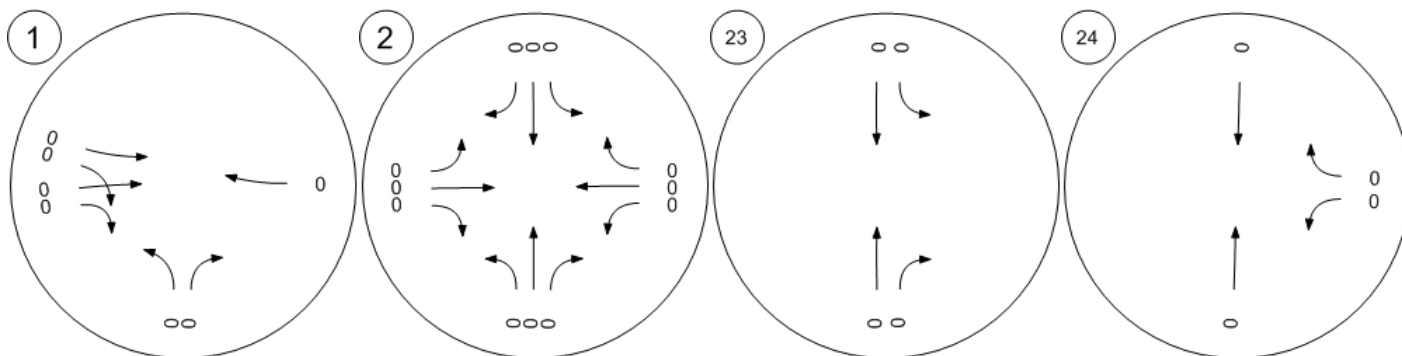
US 101 SB On-ramp & Suns



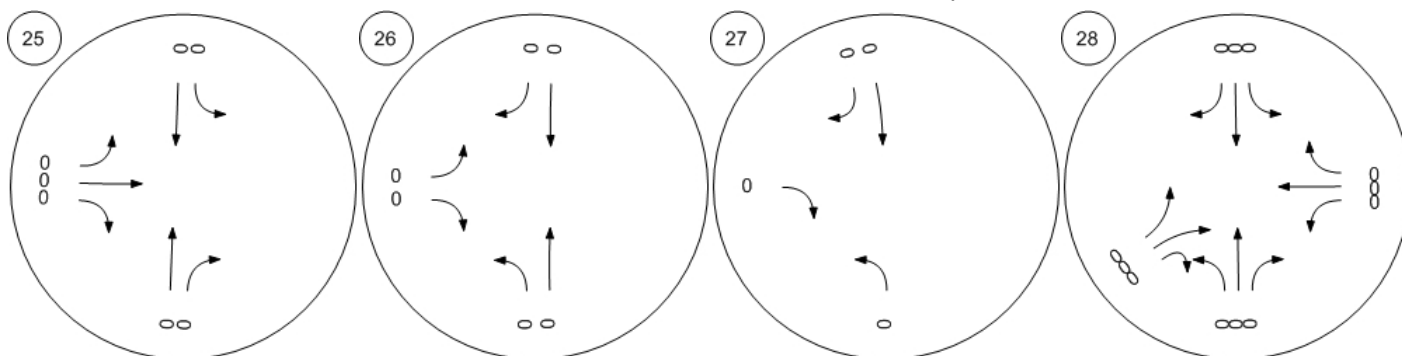
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



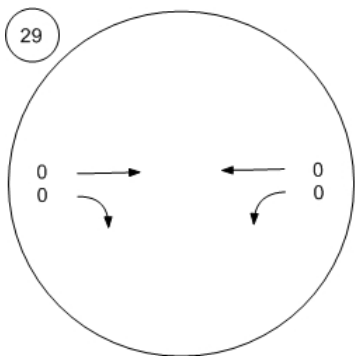
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



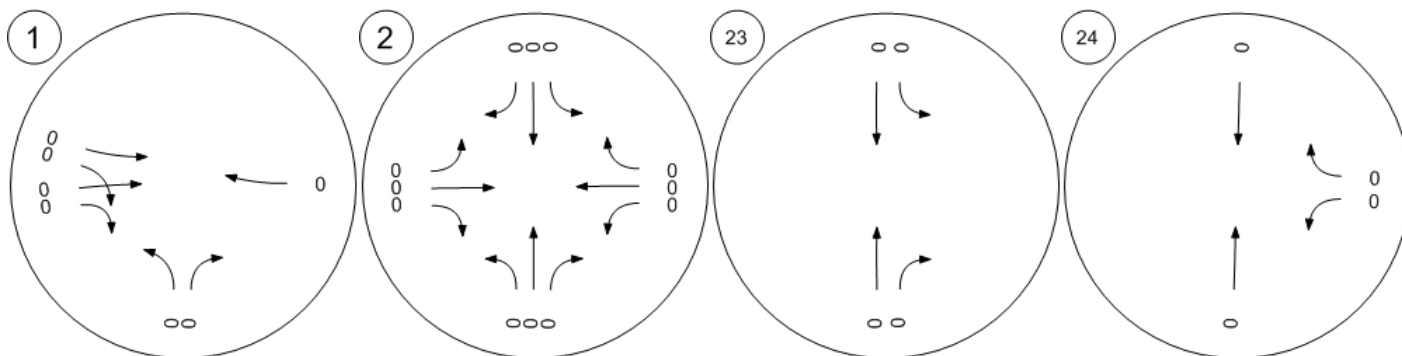
US 101 SB On-ramp & Suns



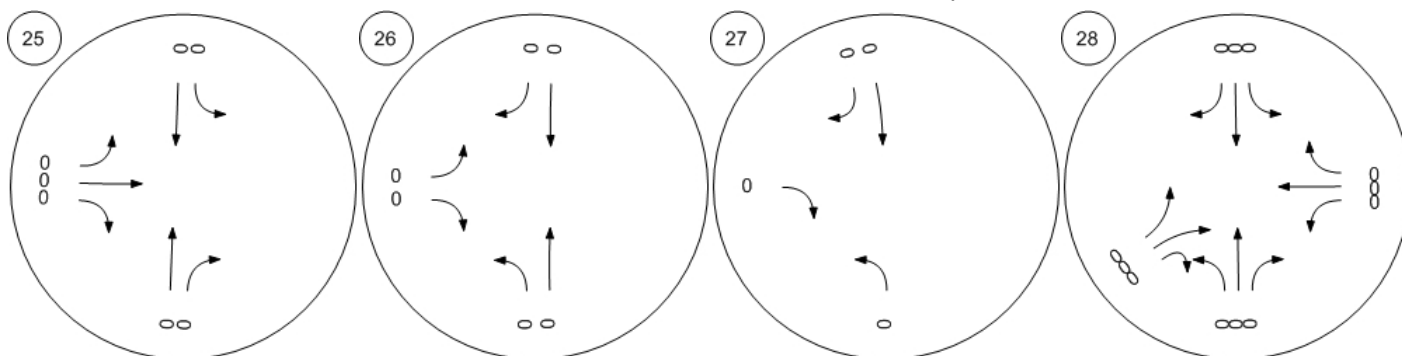
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



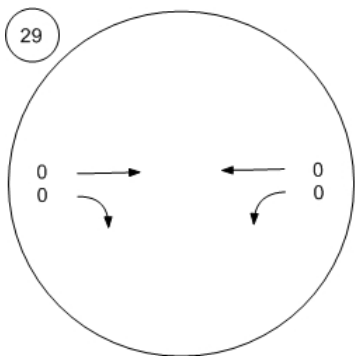
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



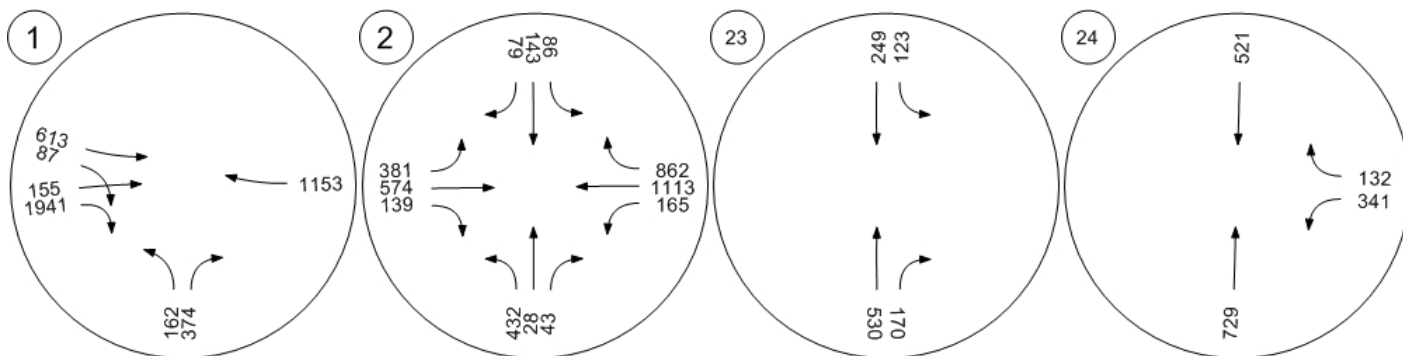
US 101 SB On-ramp & Suns



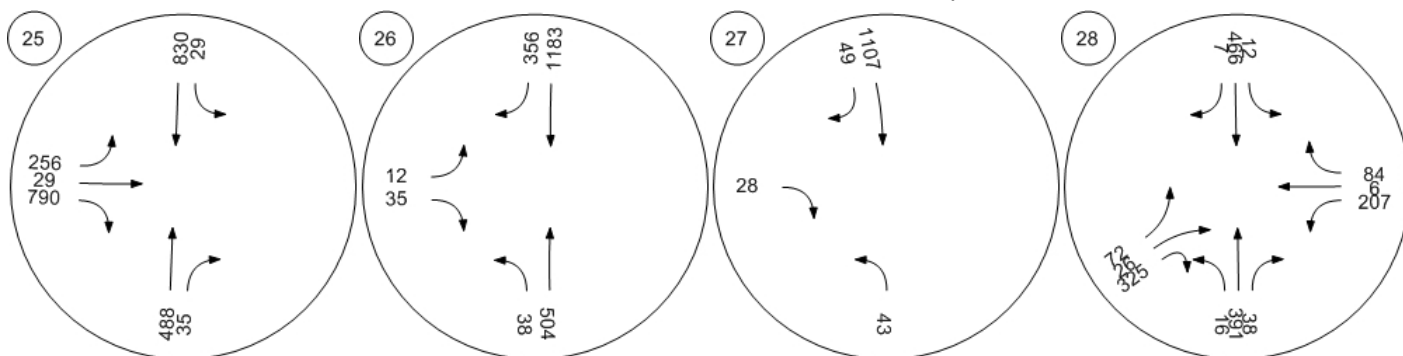
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



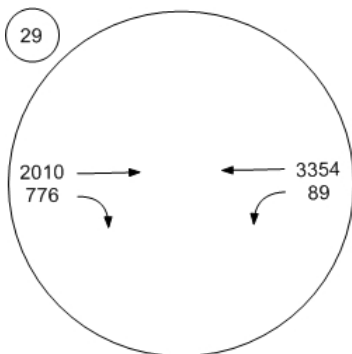
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



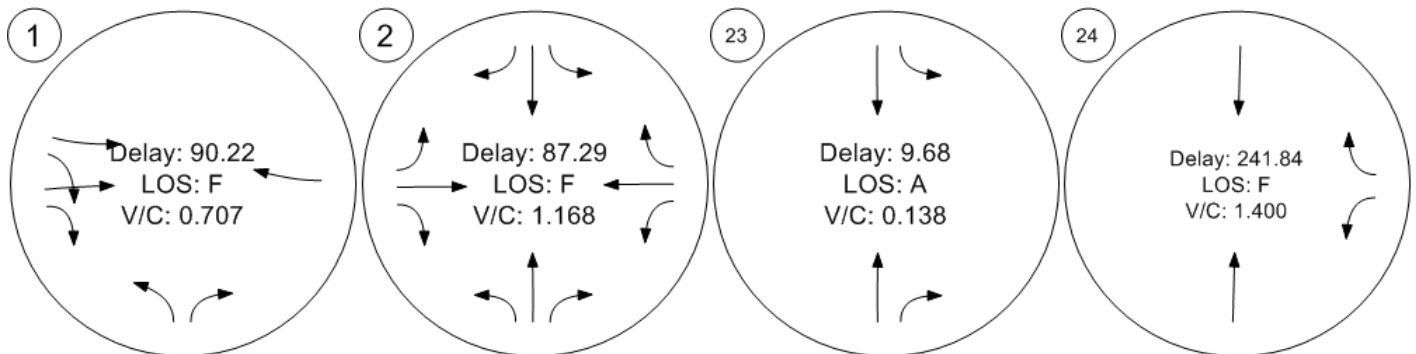
US 101 SB On-ramp & Suns



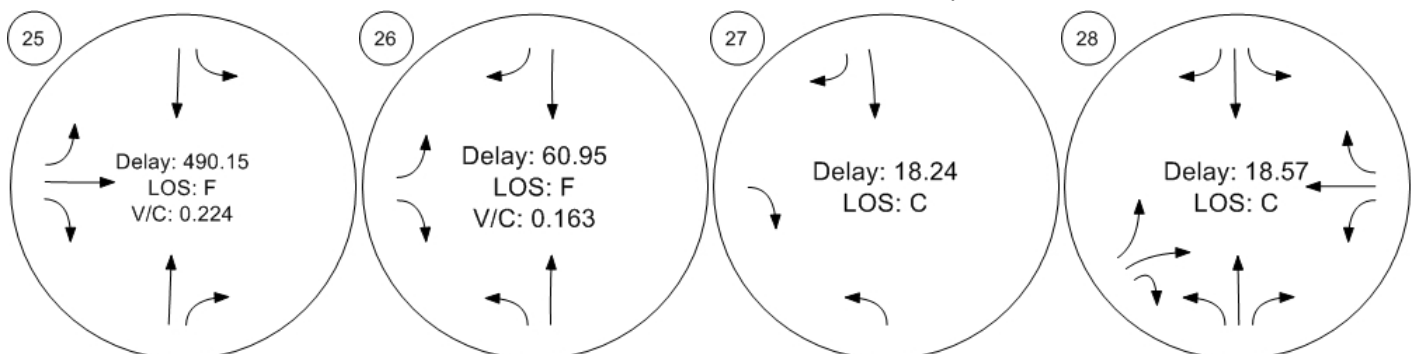
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

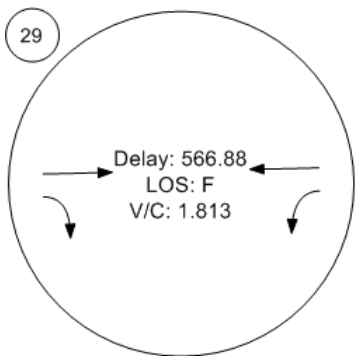


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 10: FB 2035 PM

Report File: S:\...\FB2035PM.pdf

5/19/2017

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.644	39.4	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	1.161	94.2	F
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.209	13.0	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	2.257	661.9	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.167	618.9	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.998	236.1	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		12.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		8.1	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	8.446	4,006.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	39.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.644

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	611	0	561	891	0	115	0	0	824	0	348	1300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	0	561	891	0	115	0	0	824	0	348	1300
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	0	140	223	0	29	0	0	206	0	87	325
Total Analysis Volume [veh/h]	611	0	561	891	0	115	0	0	824	0	348	1300
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	26	26	53	23	82
g / C, Green / Cycle	0.32	0.32	0.29	0.29	0.59	0.26	0.91
(v / s)_i Volume / Saturation Flow Rate	0.33	0.37	0.25	0.07	0.23	0.19	0.82
s, saturation flow rate [veh/h]	1774	1591	3547	1583	3547	1863	1583
c, Capacity [veh/h]	564	506	1034	462	2104	479	1443
d1, Uniform Delay [s]	30.71	30.71	30.17	24.36	9.71	30.56	0.99
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.21	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	48.35	91.66	2.25	0.28	0.12	4.06	9.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

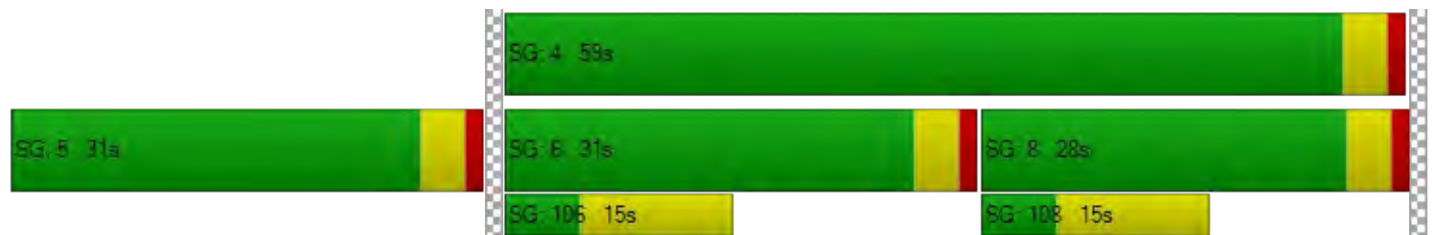
X, volume / capacity	1.04	1.16	0.86	0.25	0.39	0.73	0.90
d, Delay for Lane Group [s/veh]	79.06	122.36	32.42	24.64	9.82	34.61	10.38
Lane Group LOS	F	F	C	C	A	C	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	19.30	23.39	9.15	1.87	3.94	7.25	3.76
50th-Percentile Queue Length [ft]	482.56	584.75	228.69	46.87	98.56	181.29	94.06
95th-Percentile Queue Length [veh]	27.18	34.27	14.11	3.37	7.10	11.67	6.77
95th-Percentile Queue Length [ft]	679.41	856.63	352.70	84.37	177.42	291.70	169.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.83	0.00	122.36	32.42	0.00	24.64	0.00	0.00	9.82	0.00	34.61	10.38
Movement LOS	F		F	C		C			A		C	B
d_A, Approach Delay [s/veh]	100.71			31.53			9.82			15.50		
Approach LOS	F			C			A			B		
d_I, Intersection Delay [s/veh]	39.44											
Intersection LOS	D											
Intersection V/C	0.644											

Sequence




Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	94.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.161

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	692	52	163	57	92	47	483	1174	107	121	797	940
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	692	52	163	57	92	47	483	1174	107	121	797	940
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	13	41	14	23	12	121	294	27	30	199	235
Total Analysis Volume [veh/h]	692	52	163	57	92	47	483	1174	107	121	797	940
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	11	47	0	9	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	45	45	8	41	41
g / C, Green / Cycle	0.17	0.17	0.17	0.07	0.07	0.07	0.63	0.50	0.50	0.09	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.10	0.03	0.05	0.03	0.76	0.33	0.07	0.07	0.43	0.59
s, saturation flow rate [veh/h]	1774	1786	1583	1774	1863	1583	634	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	125	131	111	391	1765	788	155	852	724
d1, Uniform Delay [s]	37.51	37.51	34.84	40.19	40.92	40.09	34.52	16.98	12.18	40.22	23.18	24.43
k, delay calibration	0.50	0.50	0.14	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	140.10	137.50	3.10	2.59	6.67	2.53	125.63	2.00	0.36	8.15	18.72	144.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.26	1.25	0.62	0.46	0.70	0.42	1.23	0.67	0.14	0.78	0.94	1.30
d, Delay for Lane Group [s/veh]	177.61	175.01	37.94	42.79	47.60	42.62	160.14	18.98	12.54	48.37	41.91	168.90
Lane Group LOS	F	F	D	D	D	D	F	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	17.88	17.79	3.49	1.29	2.21	1.06	16.86	8.98	1.19	2.94	19.34	43.32
50th-Percentile Queue Length [ft]	447.02	444.63	87.23	32.23	55.34	26.61	421.50	224.42	29.71	73.50	483.57	1083.02
95th-Percentile Queue Length [veh]	27.50	27.32	6.28	2.32	3.98	1.92	27.25	13.89	2.14	5.29	26.56	64.28
95th-Percentile Queue Length [ft]	687.54	683.09	157.02	58.01	99.60	47.90	681.22	347.26	53.48	132.30	663.89	1606.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	176.41	175.01	37.94	42.79	47.60	42.62	160.14	18.98	12.54	48.37	41.91	168.90
Movement LOS	F	F	D	D	D	D	F	B	B	D	D	F
d_A, Approach Delay [s/veh]	151.44			45.01			57.24			106.57		
Approach LOS	F			D			E			F		
d_I, Intersection Delay [s/veh]	94.21											
Intersection LOS	F											
Intersection V/C	1.161											

Sequence


Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.209

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	975	242	119	155	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	975	242	119	155	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	244	61	30	39	0	0
Total Analysis Volume [veh/h]	975	242	119	155	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.21	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	13.00	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.78	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	19.57	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		5.64		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.04					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	661.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.257

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1379	0	0	352	234	131
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1379	0	0	352	234	131
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	345	0	0	88	59	33
Total Analysis Volume [veh/h]	1379	0	0	352	234	131
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	2.26	0.34
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	661.90	18.94
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	20.56	1.46
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	513.93	36.58
d_A, Approach Delay [s/veh]	0.00		0.00		431.14	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	75.08					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	618.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.167

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	1028	18	13	571	0	324	16	471	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1028	18	13	571	0	324	16	471	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	257	5	3	143	0	81	4	118	0	0	0
Total Analysis Volume [veh/h]	0	1028	18	13	571	0	324	16	471	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.01	0.00	2.03	0.17	0.66	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	10.56	0.00	0.00	603.83	618.86	19.41	0.00	0.00	0.00
Movement LOS		A	A	B	A		F	F	C			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	2.26	1.13	0.00	27.72	16.38	5.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	56.60	28.30	0.00	692.88	409.39	125.89	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.23			264.71			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	88.00											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	236.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.998

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	109	1049	743	289	53	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	1049	743	289	53	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	262	186	72	13	16
Total Analysis Volume [veh/h]	109	1049	743	289	53	63
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.01	0.01	0.00	1.00	0.13
d_M, Delay for Movement [s/veh]	11.43	0.00	0.00	0.00	236.07	175.42
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	10.15	5.07	0.00	0.00	7.44	7.44
95th-Percentile Queue Length [ft]	253.70	126.85	0.00	0.00	185.94	185.94
d_A, Approach Delay [s/veh]	1.08		0.00		203.13	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	10.76					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

12.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	134	0	871	4	0	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	0	871	4	0	32
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	0	218	1	0	8
Total Analysis Volume [veh/h]	134	0	871	4	0	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.55	3.64	3.63	0.10
95th-Percentile Queue Length [ft]	13.80	91.04	90.80	2.50
Approach Delay [s/veh]	7.97	13.37		6.76
Approach LOS	A	B		A
Intersection Delay [s/veh]	12.47			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 8.1
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	31	8	1	10	0	5	0	0	0	0
Total Analysis Volume [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	0.36	0.23	
95th-Percentile Queue Length [ft]	9.65	8.91	5.65	
Approach Delay [s/veh]	8.09		7.69	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	8.08			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	93	0	2	38	0	17	11	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	0	2	38	0	17	11	122
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	1	10	0	4	3	31
Total Analysis Volume [veh/h]	93	0	2	38	0	17	11	122
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.58	0.13	0.53
95th-Percentile Queue Length [ft]	14.51	3.33	13.33
Approach Delay [s/veh]	8.27	8.06	
Approach LOS	A	A	
Intersection Delay [s/veh]	8.08		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	4,006.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	8.446

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2848	1130	95	2880
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2848	1130	95	2880
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	712	283	24	720
Total Analysis Volume [veh/h]	0	0	2848	1130	95	2880
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.01	8.45	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	4006.26	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	13.17	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	329.33	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		127.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	54.74					
Intersection LOS	F					

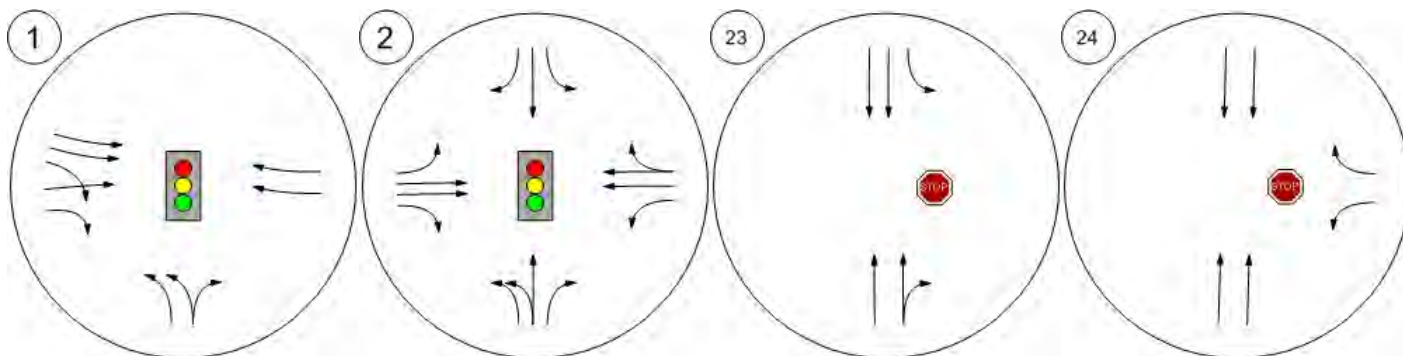
Study Intersections



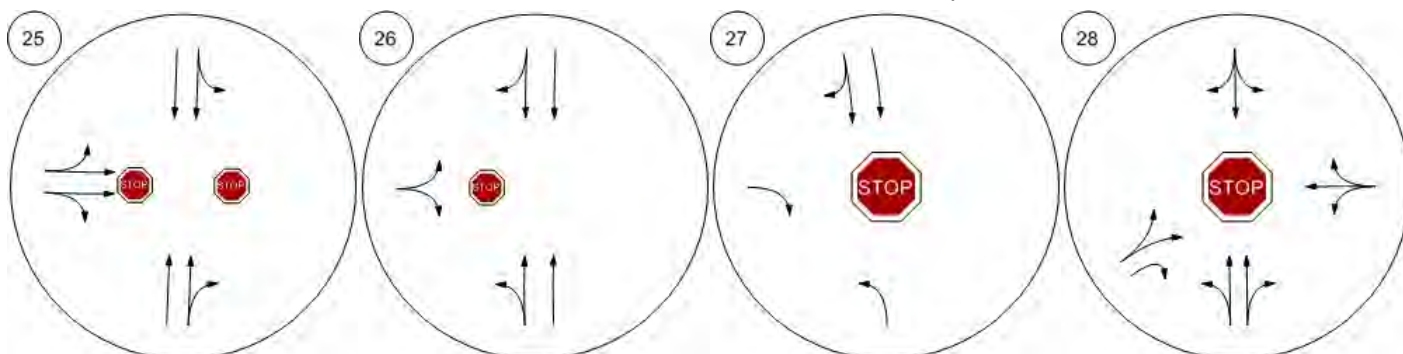
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



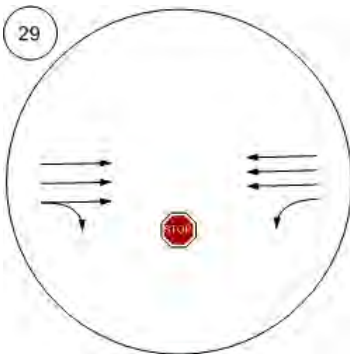
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



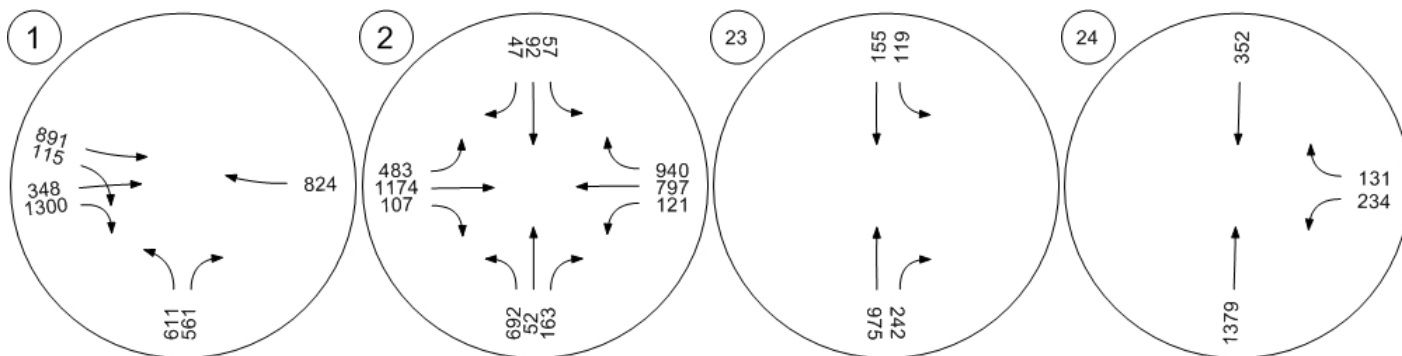
US 101 SB On-ramp & Suns



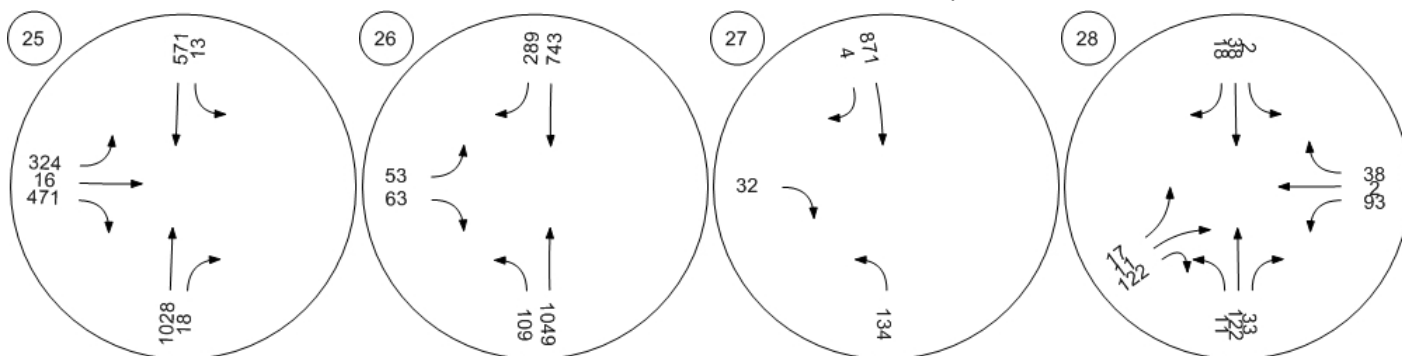
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



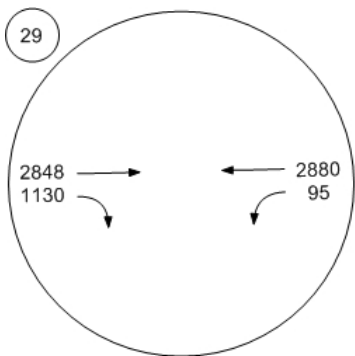
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



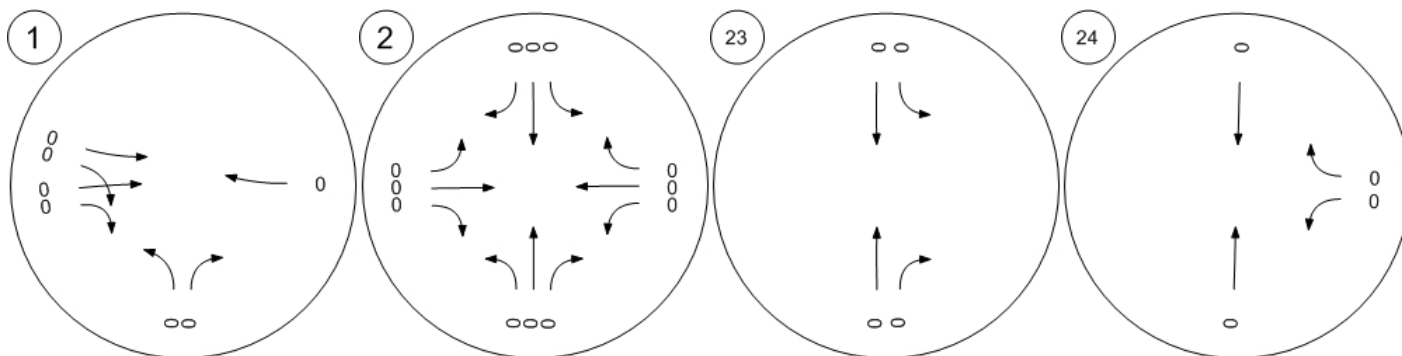
US 101 SB On-ramp & Suns



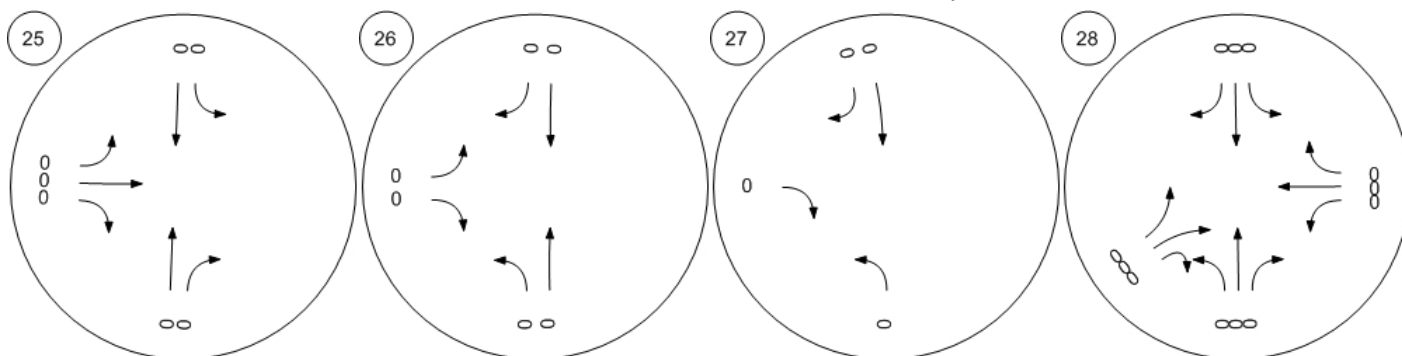
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



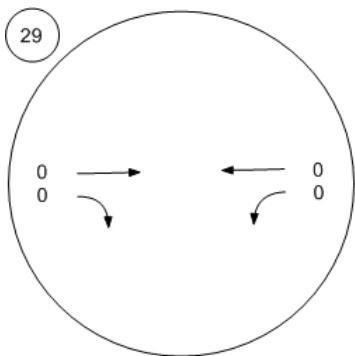
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



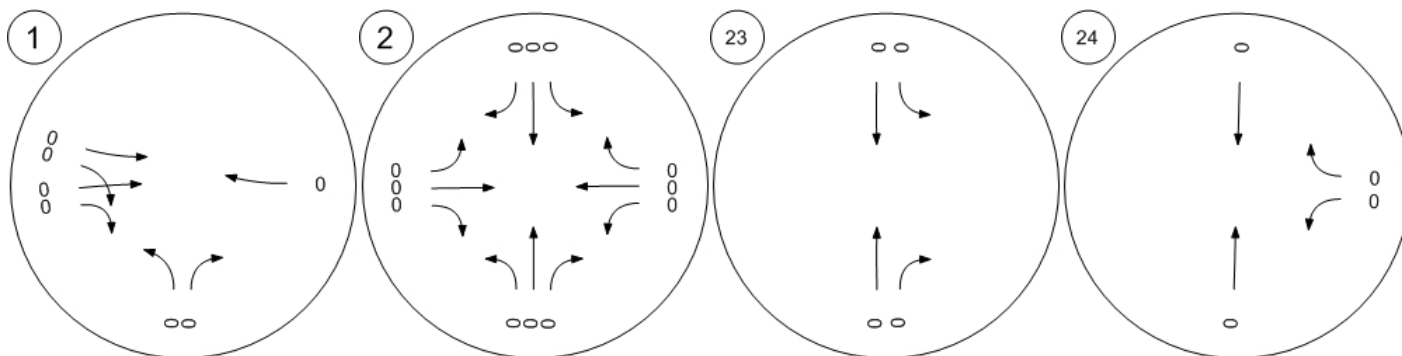
US 101 SB On-ramp & Suns



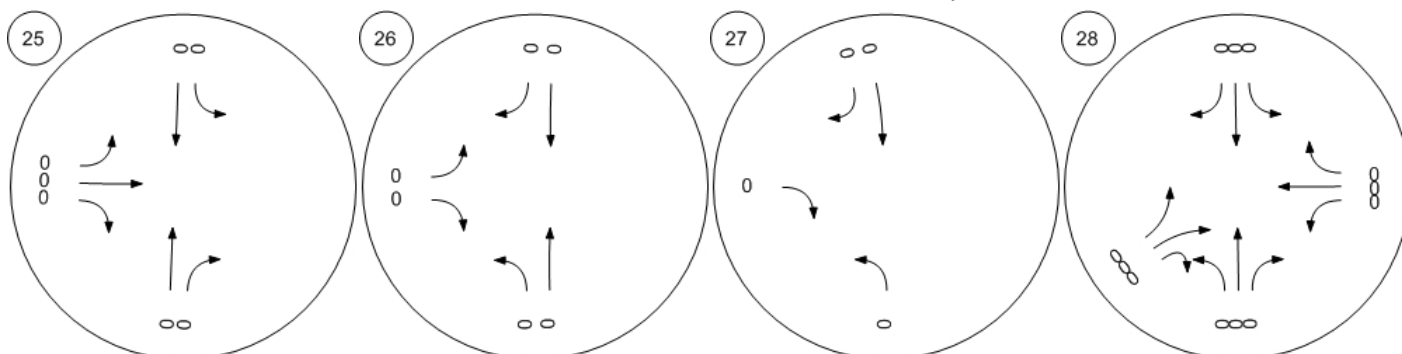
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



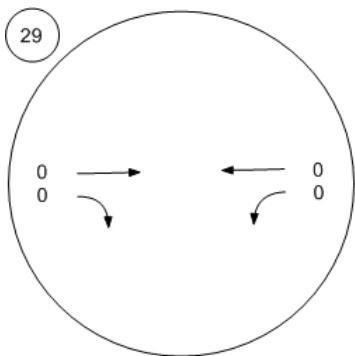
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



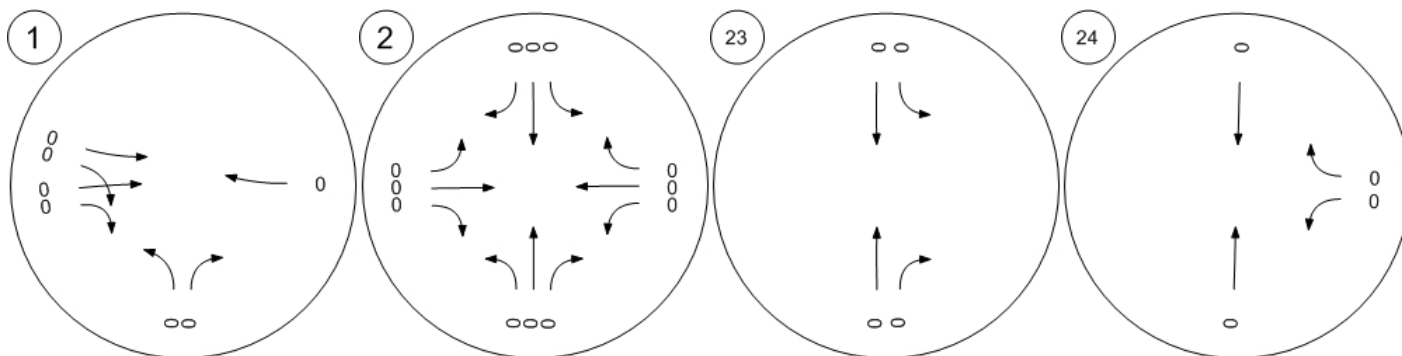
US 101 SB On-ramp & Suns



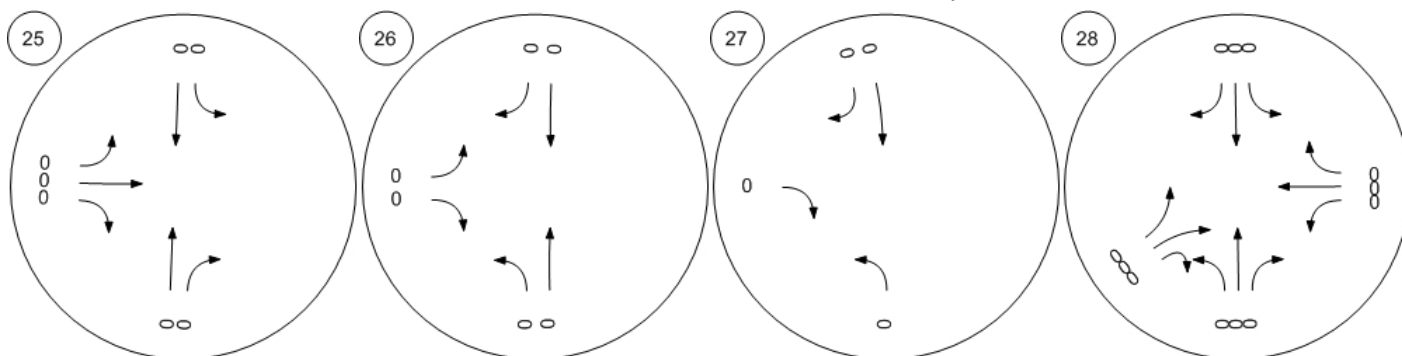
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



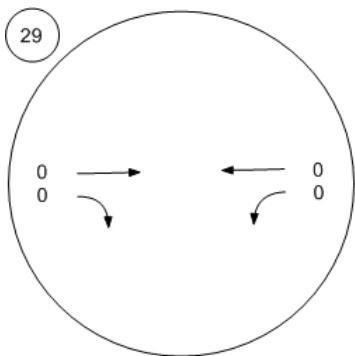
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



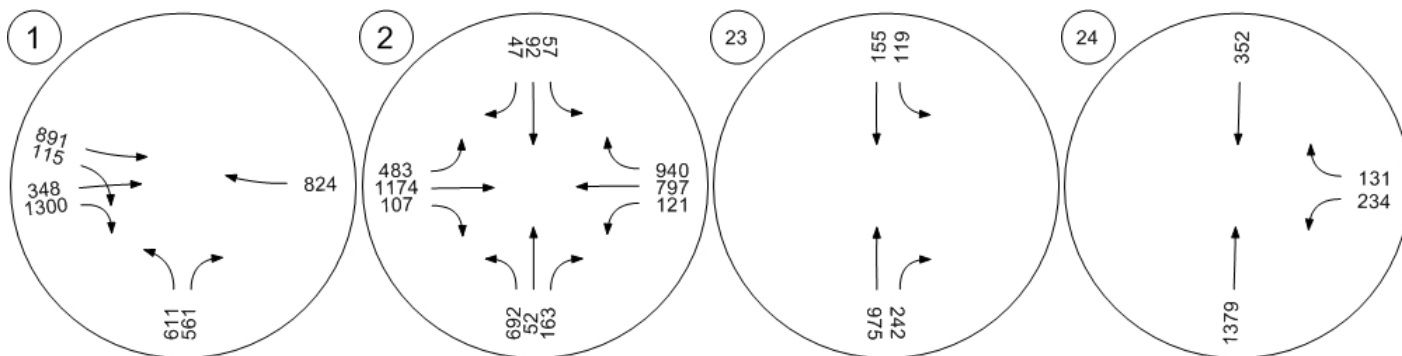
US 101 SB On-ramp & Suns



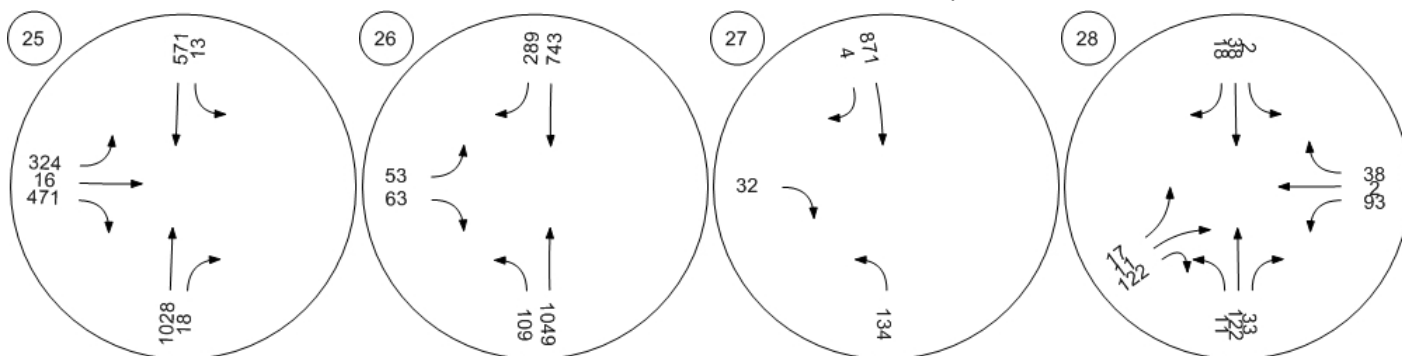
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



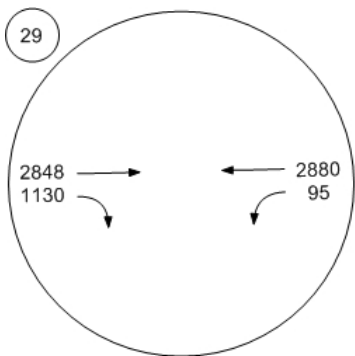
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



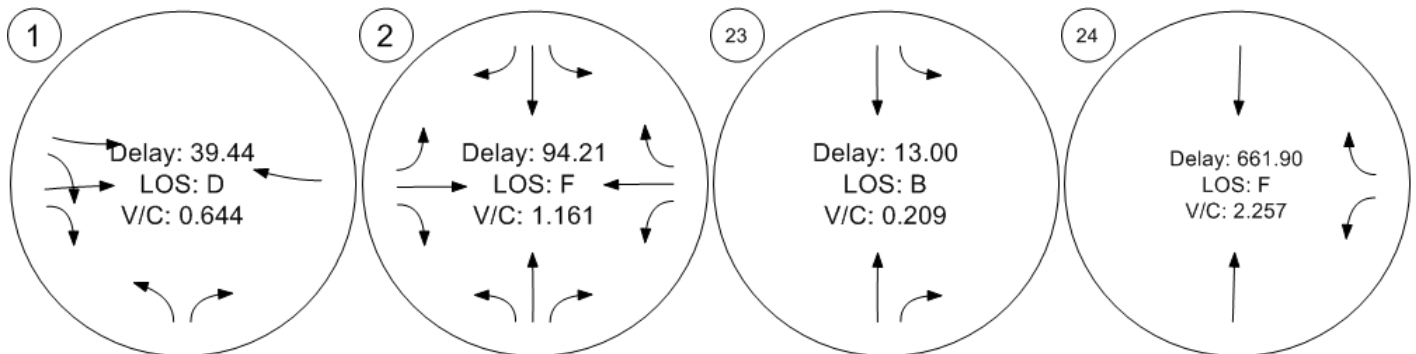
US 101 SB On-ramp & Suns



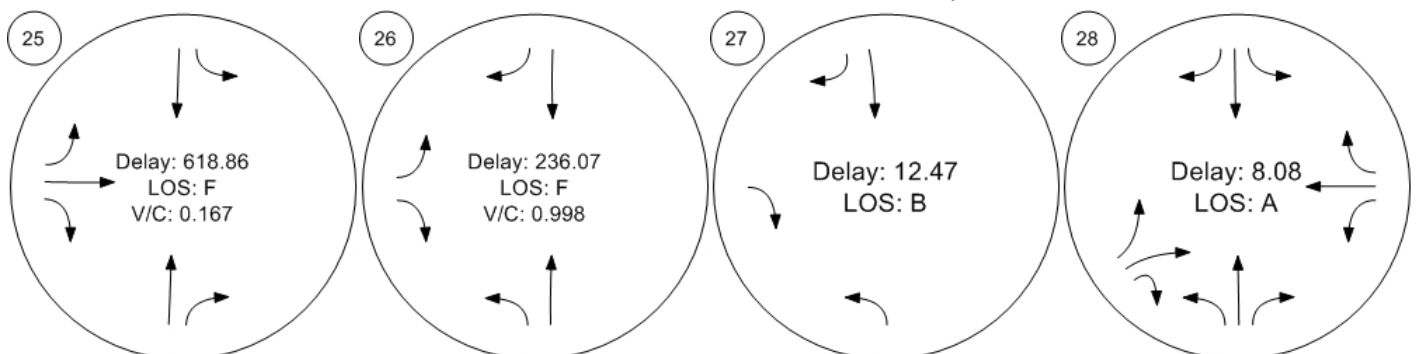
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

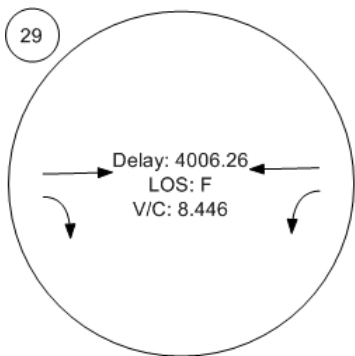


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 12: FP 2035 PM

Report File: S:\...\FP2035PM.pdf

5/19/2017

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.649	42.1	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	1.164	95.5	F
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.211	13.1	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	2.326	693.0	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.170	641.2	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	1.028	250.4	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		12.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		8.1	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	8.618	4,096.2	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	42.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	611	0	561	896	0	115	0	0	827	0	348	1319
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	0	561	896	0	115	0	0	827	0	348	1319
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	0	140	224	0	29	0	0	207	0	87	330
Total Analysis Volume [veh/h]	611	0	561	896	0	115	0	0	827	0	348	1319
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	26	26	54	24	82
g / C, Green / Cycle	0.31	0.31	0.29	0.29	0.60	0.26	0.91
(v / s)_i Volume / Saturation Flow Rate	0.33	0.37	0.25	0.07	0.23	0.19	0.83
s, saturation flow rate [veh/h]	1774	1591	3547	1583	3547	1863	1583
c, Capacity [veh/h]	550	493	1037	463	2132	492	1443
d1, Uniform Delay [s]	31.06	31.06	30.16	24.31	9.34	29.97	1.06
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.21	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	56.97	103.56	2.30	0.28	0.12	3.62	10.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

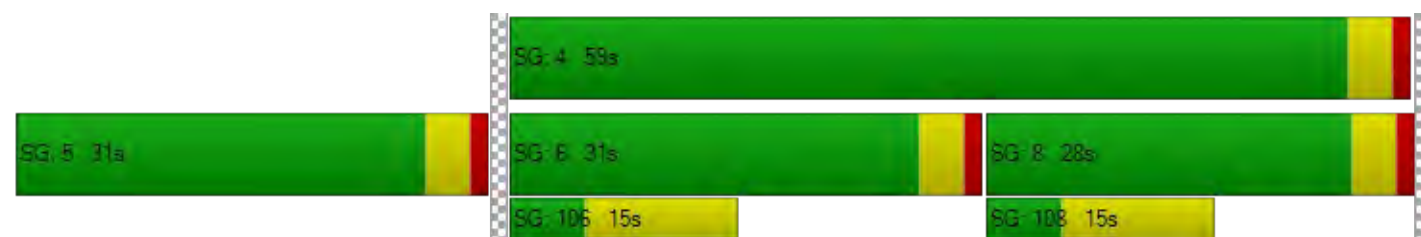
X, volume / capacity	1.07	1.19	0.86	0.25	0.39	0.71	0.91
d, Delay for Lane Group [s/veh]	88.03	134.62	32.46	24.59	9.46	33.59	11.53
Lane Group LOS	F	F	C	C	A	C	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	20.17	24.46	9.21	1.87	3.85	7.13	4.19
50th-Percentile Queue Length [ft]	504.17	611.59	230.25	46.81	96.32	178.24	104.87
95th-Percentile Queue Length [veh]	28.67	36.10	14.19	3.37	6.94	11.51	7.55
95th-Percentile Queue Length [ft]	716.65	902.43	354.67	84.26	173.38	287.71	188.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	89.94	0.00	134.62	32.46	0.00	24.59	0.00	0.00	9.46	0.00	33.59	11.53
Movement LOS	F		F	C		C			A		C	B
d_A, Approach Delay [s/veh]	111.33			31.56			9.46			16.14		
Approach LOS	F			C			A			B		
d_I, Intersection Delay [s/veh]	42.14											
Intersection LOS	D											
Intersection V/C	0.649											

Sequence


Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	95.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.164

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	703	52	163	57	92	47	483	1174	112	121	797	940
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	703	52	163	57	92	47	483	1174	112	121	797	940
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	176	13	41	14	23	12	121	294	28	30	199	235
Total Analysis Volume [veh/h]	703	52	163	57	92	47	483	1174	112	121	797	940
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	11	47	0	9	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	45	45	8	41	41
g / C, Green / Cycle	0.17	0.17	0.17	0.07	0.07	0.07	0.63	0.50	0.50	0.09	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.10	0.03	0.05	0.03	0.76	0.33	0.07	0.07	0.43	0.59
s, saturation flow rate [veh/h]	1774	1786	1583	1774	1863	1583	634	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	125	131	111	391	1765	788	155	852	724
d1, Uniform Delay [s]	37.51	37.51	34.84	40.19	40.92	40.09	34.52	16.98	12.22	40.22	23.18	24.43
k, delay calibration	0.50	0.50	0.14	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	147.64	144.88	3.10	2.59	6.67	2.53	125.63	2.00	0.38	8.15	18.72	144.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.28	1.27	0.62	0.46	0.70	0.42	1.23	0.67	0.14	0.78	0.94	1.30
d, Delay for Lane Group [s/veh]	185.15	182.39	37.94	42.79	47.60	42.62	160.14	18.98	12.60	48.37	41.91	168.90
Lane Group LOS	F	F	D	D	D	D	F	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	18.50	18.39	3.49	1.29	2.21	1.06	16.86	8.98	1.25	2.94	19.34	43.32
50th-Percentile Queue Length [ft]	462.50	459.84	87.23	32.23	55.34	26.61	421.50	224.42	31.21	73.50	483.57	1083.02
95th-Percentile Queue Length [veh]	28.49	28.29	6.28	2.32	3.98	1.92	27.25	13.89	2.25	5.29	26.56	64.28
95th-Percentile Queue Length [ft]	712.14	707.25	157.02	58.01	99.60	47.90	681.22	347.26	56.18	132.30	663.89	1606.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	183.87	182.39	37.94	42.79	47.60	42.62	160.14	18.98	12.60	48.37	41.91	168.90
Movement LOS	F	F	D	D	D	D	F	B	B	D	D	F
d_A, Approach Delay [s/veh]	157.88			45.01			57.12			106.57		
Approach LOS	F			D			E			F		
d_I, Intersection Delay [s/veh]	95.51											
Intersection LOS	F											
Intersection V/C	1.164											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.211

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	985	242	119	160	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	985	242	119	160	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	246	61	30	40	0	0
Total Analysis Volume [veh/h]	985	242	119	160	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.21	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	13.09	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.79	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	19.78	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		5.58		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.03					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	693.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.326

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1382	0	0	358	239	131
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1382	0	0	358	239	131
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	346	0	0	90	60	33
Total Analysis Volume [veh/h]	1382	0	0	358	239	131
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	2.33	0.34
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	692.99	18.99
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	21.25	1.47
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	531.24	36.70
d_A, Approach Delay [s/veh]	0.00		0.00		454.36	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	79.67					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	641.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	1031	18	13	582	0	324	16	471	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1031	18	13	582	0	324	16	471	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	258	5	3	146	0	81	4	118	0	0	0
Total Analysis Volume [veh/h]	0	1031	18	13	582	0	324	16	471	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.01	0.00	2.07	0.17	0.67	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	10.57	0.00	0.00	625.85	641.17	19.73	0.00	0.00	0.00
Movement LOS		A	A	B	A		F	F	C			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	2.35	1.17	0.00	28.07	16.60	5.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	58.66	29.33	0.00	701.68	414.94	128.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.23			274.14			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	90.62											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	250.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.028

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	109	1052	754	289	53	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	1052	754	289	53	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	263	189	72	13	16
Total Analysis Volume [veh/h]	109	1052	754	289	53	63
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.01	0.01	0.00	1.03	0.13
d_M, Delay for Movement [s/veh]	11.50	0.00	0.00	0.00	250.36	187.72
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	10.49	5.25	0.00	0.00	7.64	7.64
95th-Percentile Queue Length [ft]	262.26	131.13	0.00	0.00	190.90	190.90
d_A, Approach Delay [s/veh]	1.08		0.00		216.34	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	11.36					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

12.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	134	0	871	4	0	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	0	871	4	0	32
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	0	218	1	0	8
Total Analysis Volume [veh/h]	134	0	871	4	0	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.55	3.64	3.63	0.10
95th-Percentile Queue Length [ft]	13.80	91.04	90.80	2.50
Approach Delay [s/veh]	7.97	13.37		6.76
Approach LOS	A	B		A
Intersection Delay [s/veh]	12.47			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 8.1
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	31	8	1	10	0	5	0	0	0	0
Total Analysis Volume [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	0.36	0.23	
95th-Percentile Queue Length [ft]	9.65	8.91	5.65	
Approach Delay [s/veh]	8.09		7.69	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	8.08			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	93	0	2	38	0	17	11	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	0	2	38	0	17	11	122
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	1	10	0	4	3	31
Total Analysis Volume [veh/h]	93	0	2	38	0	17	11	122
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.58	0.13	0.53
95th-Percentile Queue Length [ft]	14.51	3.33	13.33
Approach Delay [s/veh]	8.27	8.06	
Approach LOS	A	A	
Intersection Delay [s/veh]	8.08		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	4,096.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	8.618

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2851	1143	95	2902
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2851	1143	95	2902
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	713	286	24	726
Total Analysis Volume [veh/h]	0	0	2851	1143	95	2902
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.01	8.62	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	4096.20	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	13.20	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	329.92	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		129.84	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	55.66					
Intersection LOS	F					

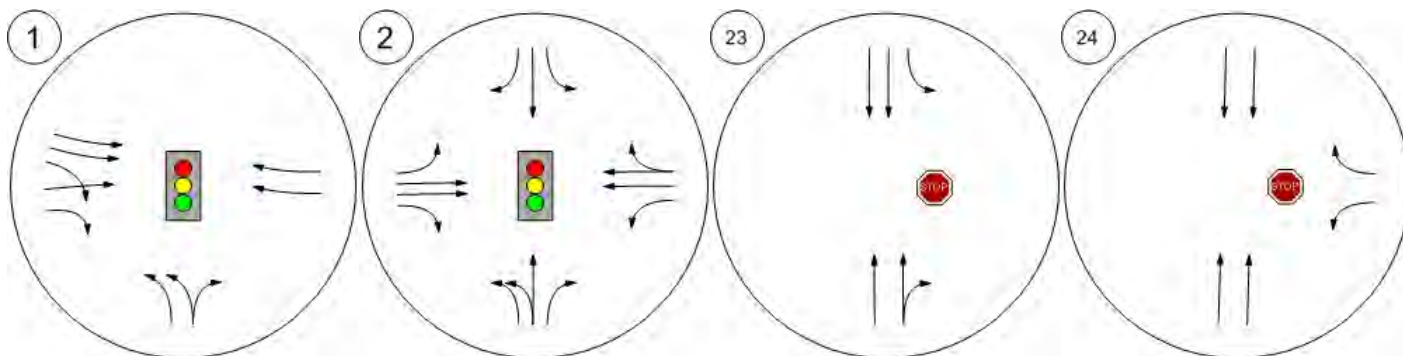
Study Intersections



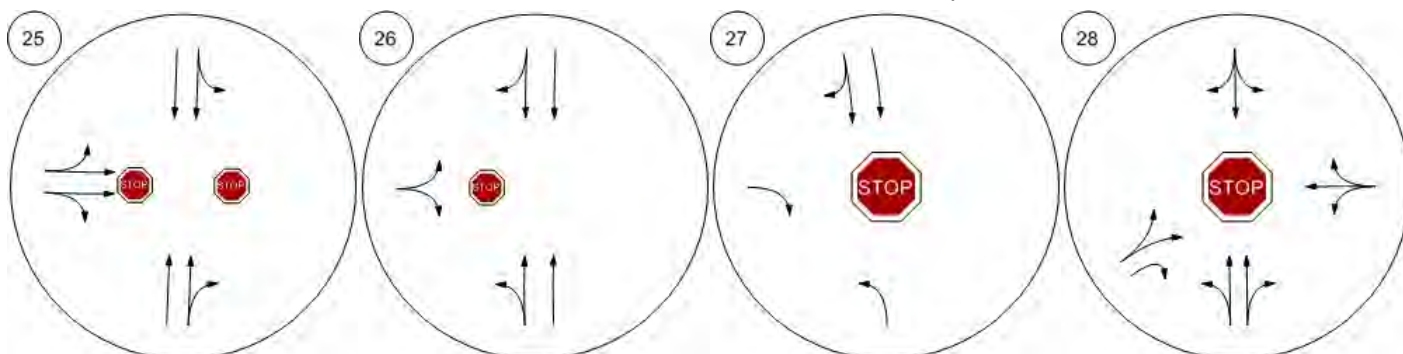
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



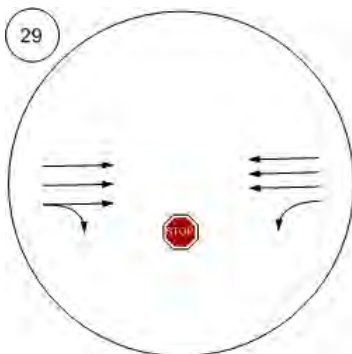
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



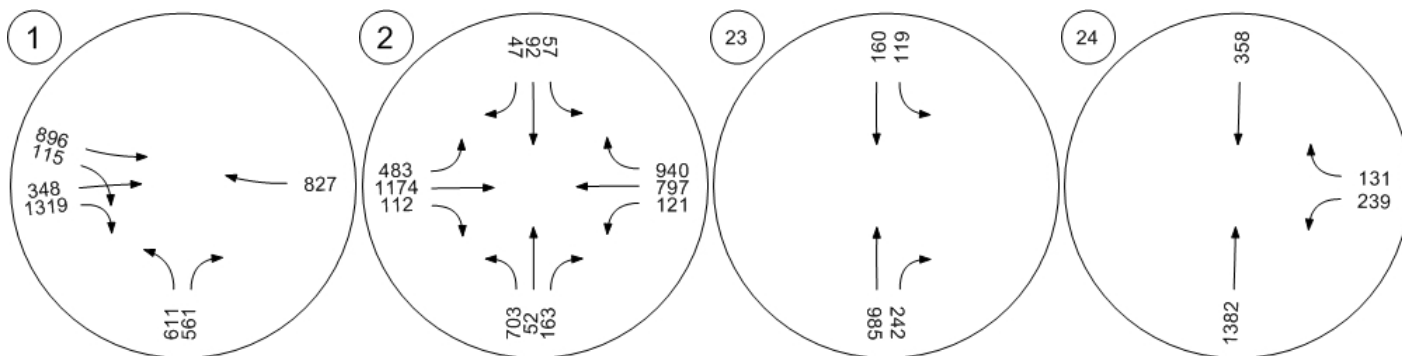
US 101 SB On-ramp & Suns



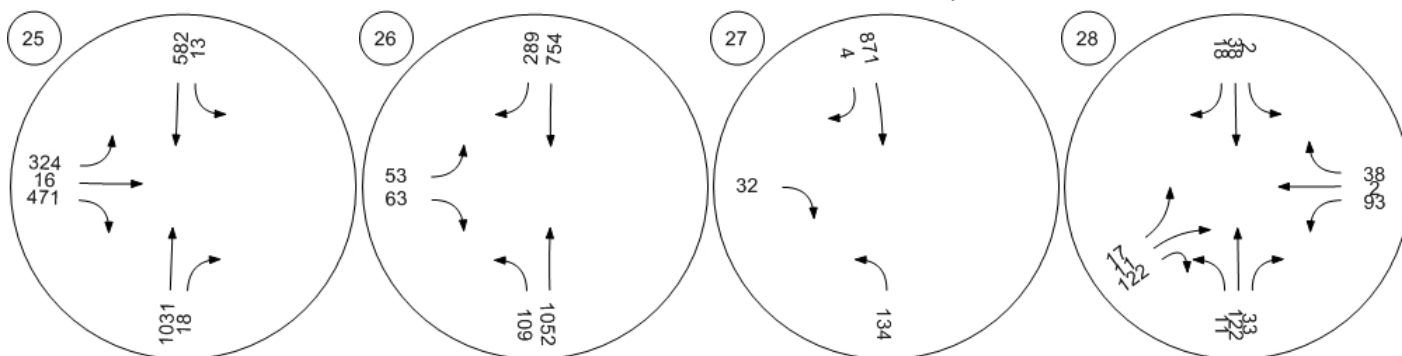
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



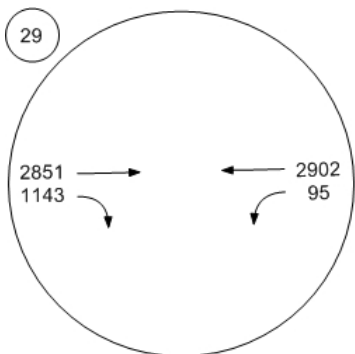
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



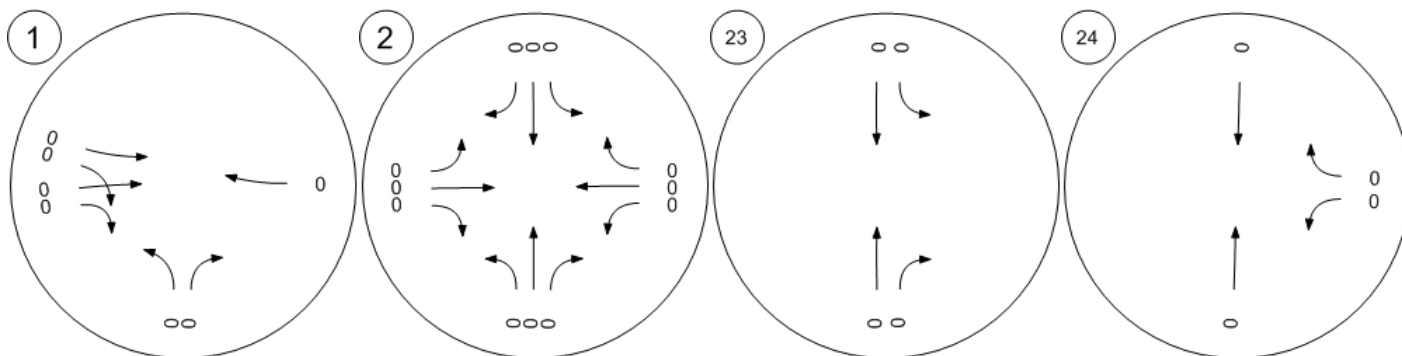
US 101 SB On-ramp & Suns



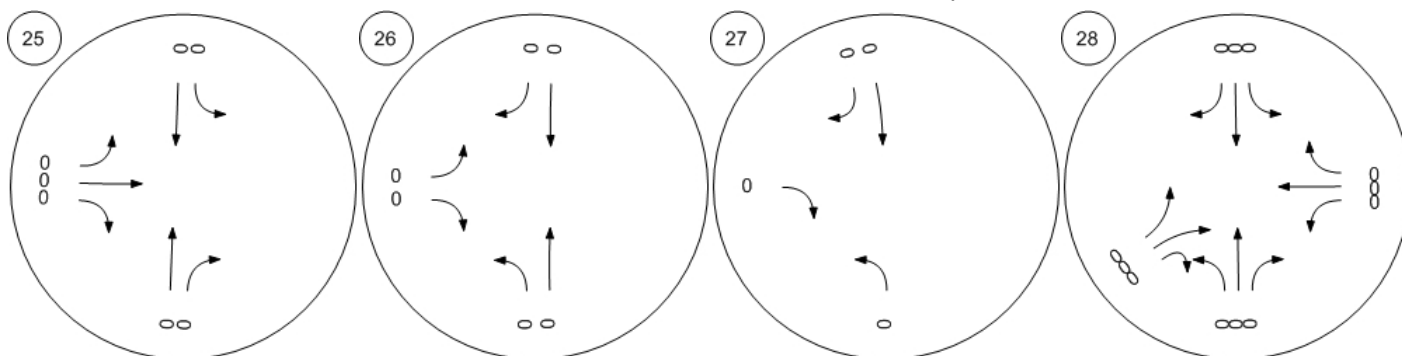
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



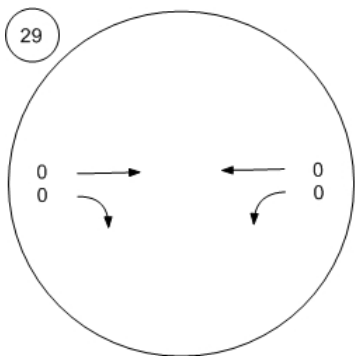
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



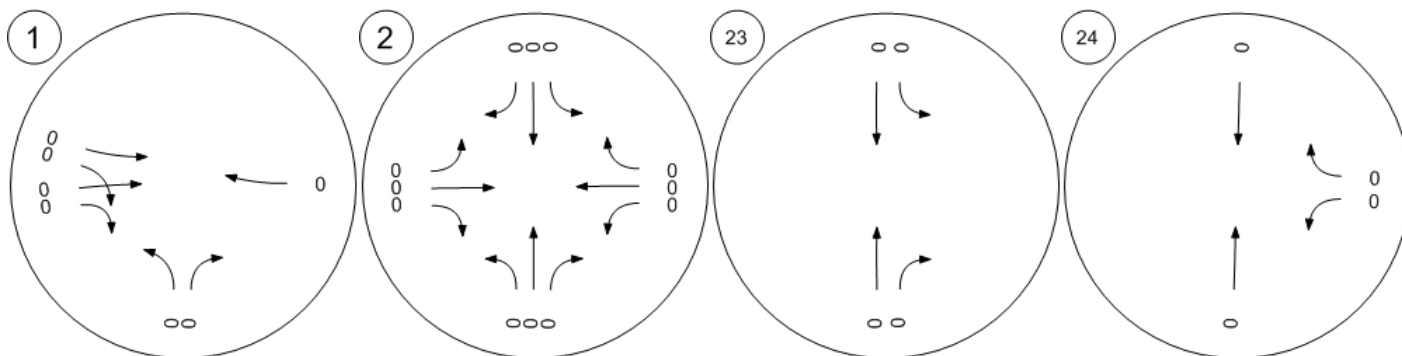
US 101 SB On-ramp & Suns



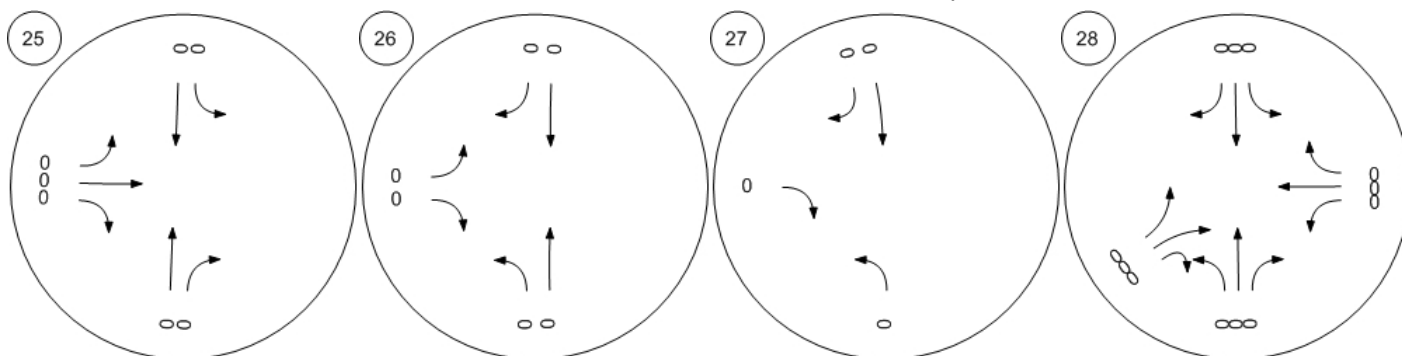
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



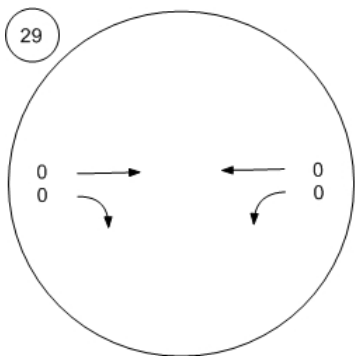
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



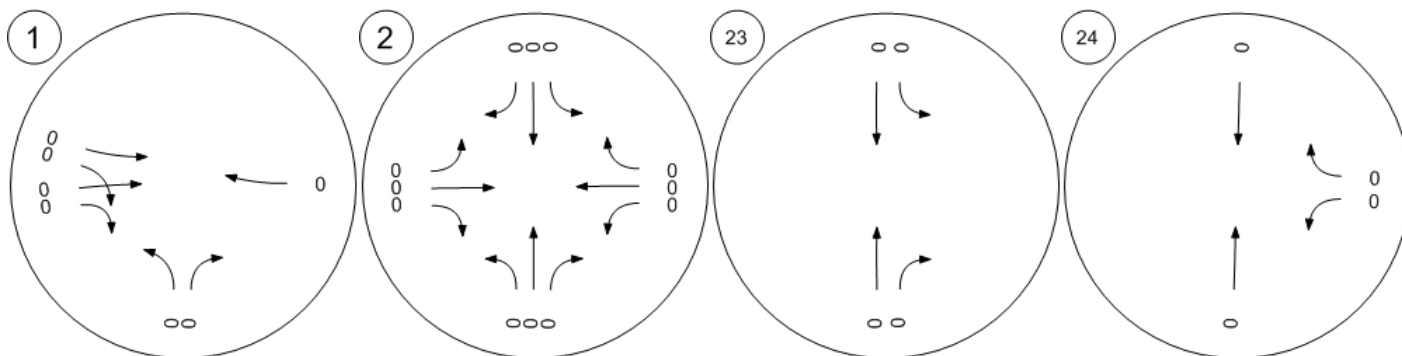
US 101 SB On-ramp & Suns



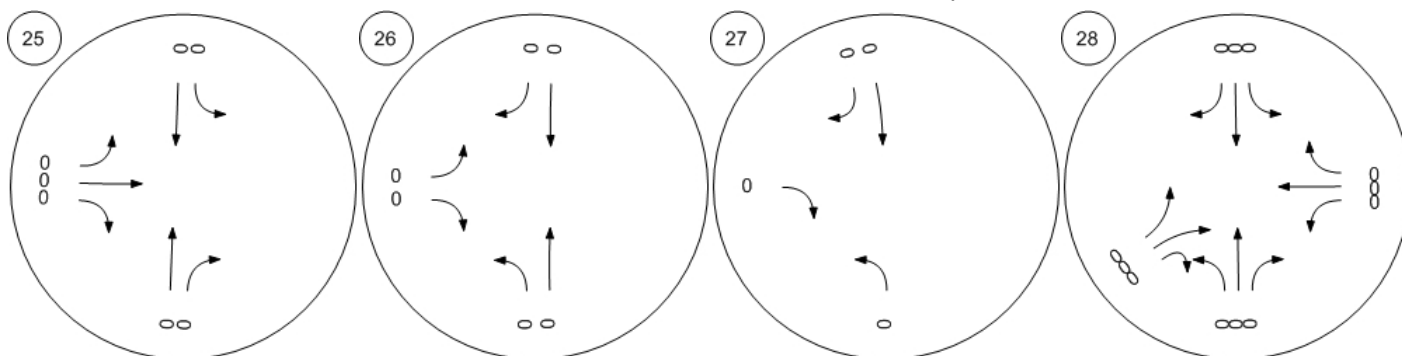
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



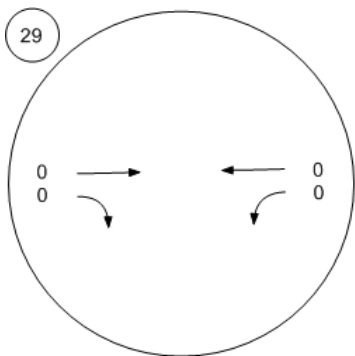
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



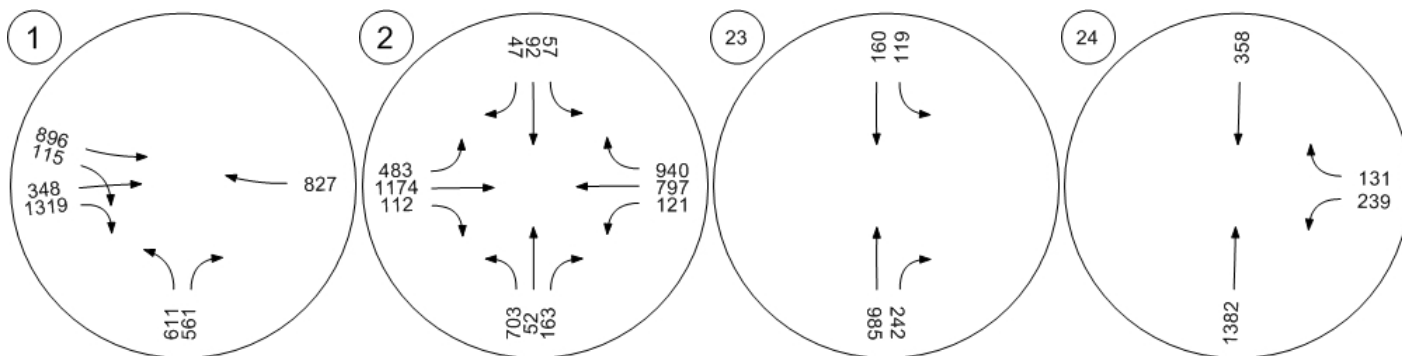
US 101 SB On-ramp & Suns



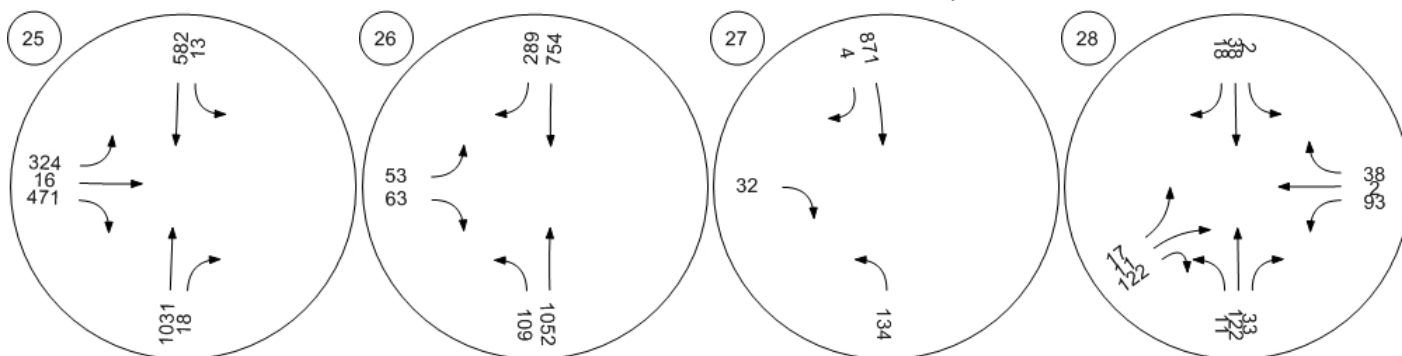
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



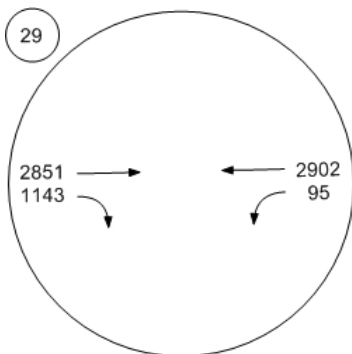
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



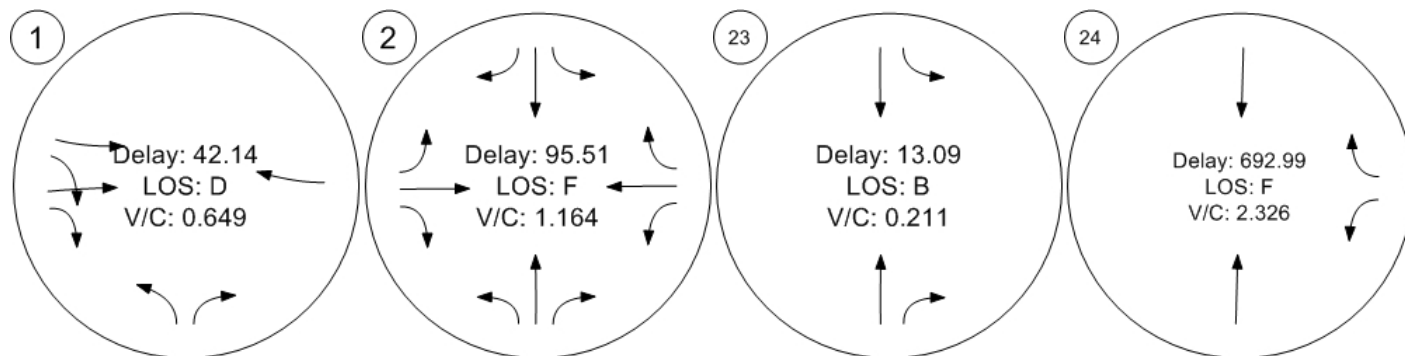
US 101 SB On-ramp & Suns



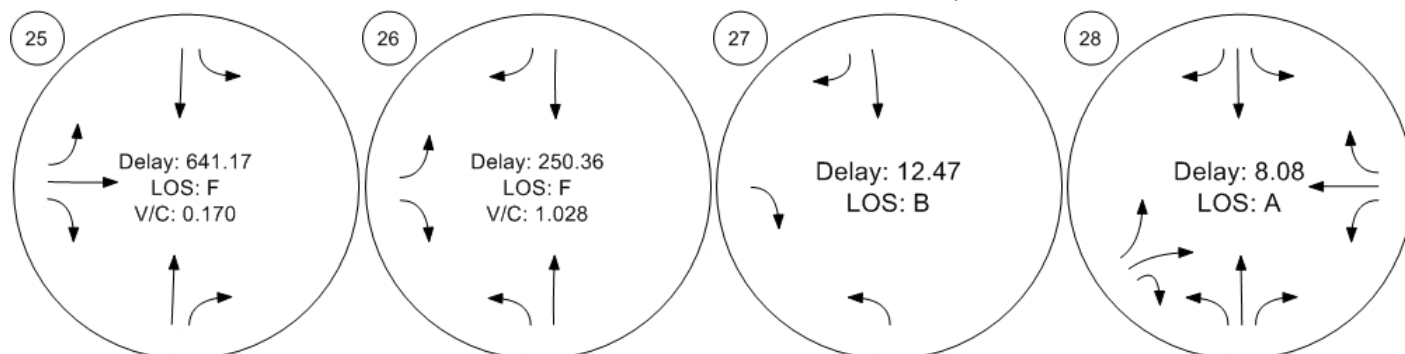
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

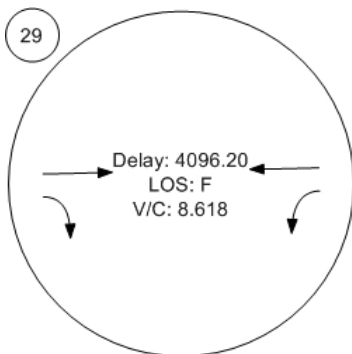


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 13: Supermarket - ExP AM

Report File: S:\...\Supermarket - ExPAM.pdf

5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.278	22.6	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.630	24.2	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.076	8.2	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.563	28.2	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.104	78.0	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.061	28.5	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		13.1	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		13.0	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.275	33.3	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 1: Vine & US 101 SB Off-ramp / Franklin**

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1450
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	61	97	0	11	0	0	226	0	33	363
Total Analysis Volume [veh/h]	113	0	242	387	0	44	0	0	903	0	130	1450
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	0	45	0	45	0	0	65	0	20	25
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	22	22	57	30	82
g / C, Green / Cycle	0.28	0.28	0.25	0.25	0.63	0.34	0.91
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.11	0.03	0.25	0.07	0.92
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	500	446	879	392	2231	627	1443
d1, Uniform Delay [s]	24.79	27.40	28.59	26.20	8.31	21.29	2.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.05	4.67	0.35	0.13	0.12	0.16	24.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.54	0.44	0.11	0.40	0.21	1.01
d, Delay for Lane Group [s/veh]	25.84	32.06	28.94	26.32	8.43	21.45	27.84
Lane Group LOS	C	C	C	C	A	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.96	4.89	3.50	0.73	3.90	1.94	9.99
50th-Percentile Queue Length [ft]	49.12	122.13	87.57	18.37	97.60	48.52	249.73
95th-Percentile Queue Length [veh]	3.54	8.51	6.31	1.32	7.03	3.49	15.24
95th-Percentile Queue Length [ft]	88.42	212.75	157.63	33.06	175.68	87.34	380.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.84	0.00	32.06	28.94	0.00	26.32	0.00	0.00	8.43	0.00	21.45	27.84
Movement LOS	C		C	C		C			A		C	F
d_A, Approach Delay [s/veh]	30.08			28.67			8.43			27.31		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	22.57											
Intersection LOS	C											
Intersection V/C	0.278											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	228	21	36	72	117	66	187	429	104	138	857	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	228	21	36	72	117	66	187	429	104	138	857	663
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	5	9	18	29	17	47	107	26	35	214	166
Total Analysis Volume [veh/h]	228	21	36	72	117	66	187	429	104	138	857	663
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	20	0	36	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	8	8	8	62	49	49	9	52	52
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.09	0.69	0.54	0.54	0.10	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.02	0.04	0.06	0.04	0.36	0.12	0.07	0.08	0.42	0.45
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	520	3547	1583	1774	1863	1606
c, Capacity [veh/h]	167	169	149	156	164	139	350	1918	856	177	1076	928
d1, Uniform Delay [s]	39.77	39.77	37.85	39.10	40.03	39.15	16.71	10.82	10.18	39.62	13.96	14.75
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.35	6.27	0.83	2.12	5.71	2.50	5.74	0.27	0.29	7.24	4.44	6.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

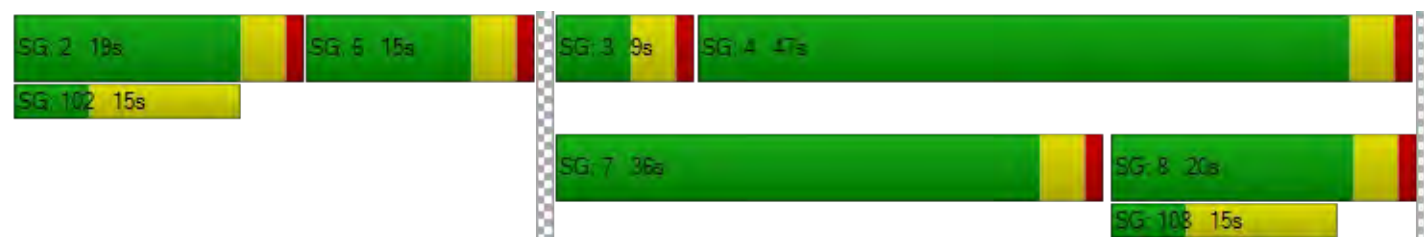
X, volume / capacity	0.74	0.74	0.24	0.46	0.72	0.47	0.53	0.22	0.12	0.78	0.73	0.79
d, Delay for Lane Group [s/veh]	46.12	46.04	38.68	41.23	45.74	41.65	22.46	11.09	10.47	46.86	18.40	21.48
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.94	2.95	0.76	1.59	2.75	1.47	1.60	2.16	1.02	3.30	11.81	11.99
50th-Percentile Queue Length [ft]	73.40	73.81	19.09	39.73	68.76	36.77	39.99	54.11	25.59	82.44	295.36	299.72
95th-Percentile Queue Length [veh]	5.29	5.31	1.37	2.86	4.95	2.65	2.88	3.90	1.84	5.94	17.45	17.67
95th-Percentile Queue Length [ft]	132.13	132.86	34.36	71.52	123.76	66.18	71.99	97.41	46.06	148.39	436.28	441.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.09	46.04	38.68	41.23	45.74	41.65	22.46	11.09	10.47	46.86	18.64	21.48
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	45.15			43.41			13.95			22.12		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	24.22											
Intersection LOS	C											
Intersection V/C	0.630											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	308	43	91	205	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	43	91	205	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	11	23	51	0	0
Total Analysis Volume [veh/h]	308	43	91	205	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.23	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.24	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	6.12	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.53		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.16					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	28.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.563

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	548	0	0	421	193	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	548	0	0	421	193	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	0	0	105	48	22
Total Analysis Volume [veh/h]	548	0	0	421	193	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.56	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	28.21	10.67
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	3.29	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	82.20	10.46
d_A, Approach Delay [s/veh]	0.00		0.00		22.68	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.11					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	78.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.104

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	347	29	24	587	0	214	24	554	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	347	29	24	587	0	214	24	554	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	87	7	6	147	0	54	6	139	0	0	0
Total Analysis Volume [veh/h]	0	347	29	24	587	0	214	24	554	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	0.81	0.10	0.79	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.12	0.00	0.00	75.96	78.01	26.40	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	D			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.04	0.52	0.00	8.08	7.97	7.85	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	25.98	12.99	0.00	202.09	199.18	196.27	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.32			41.35			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	18.52											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	28.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	26	360	905	169	10	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	360	905	169	10	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	90	226	42	3	6
Total Analysis Volume [veh/h]	26	360	905	169	10	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.01	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	10.82	0.00	0.00	0.00	28.47	13.79
Movement LOS	B	A	A	A	D	B
95th-Percentile Queue Length [veh]	1.25	0.63	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	31.34	15.67	0.00	0.00	8.83	8.83
d_A, Approach Delay [s/veh]	0.73		0.00		18.38	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.58					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

13.1
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	34	0	882	41	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	0	882	41	0	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	221	10	0	6
Total Analysis Volume [veh/h]	34	0	882	41	0	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.12	3.92	3.82	0.07
95th-Percentile Queue Length [ft]	3.08	98.11	95.44	1.67
Approach Delay [s/veh]	7.35	13.51		6.49
Approach LOS	A	B		A
Intersection Delay [s/veh]	13.13			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 13.0
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	80	8	3	94	0	2	0	0	0	0
Total Analysis Volume [veh/h]	13	0	318	32	10	374	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.22	1.17	3.67	
95th-Percentile Queue Length [ft]	30.46	29.33	91.83	
Approach Delay [s/veh]	10.76		15.20	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	13.02			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	173	0	5	70	0	60	22	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	0	5	70	0	60	22	259
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	0	1	18	0	15	6	65
Total Analysis Volume [veh/h]	173	0	5	70	0	60	22	259
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.89	0.59	2.31
95th-Percentile Queue Length [ft]	47.18	14.84	57.72
Approach Delay [s/veh]	12.44	13.33	
Approach LOS	B	B	
Intersection Delay [s/veh]	13.02		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	33.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.275

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1453	261	48	1958
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1453	261	48	1958
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	363	65	12	490
Total Analysis Volume [veh/h]	0	0	1453	261	48	1958
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.28	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	33.32	0.00
Movement LOS			A	A	D	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.07	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	26.70	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	D					

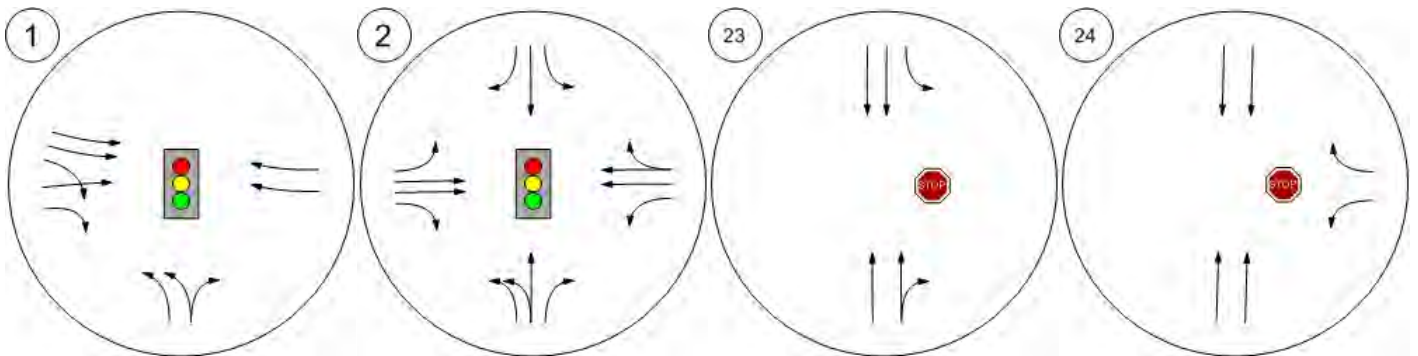
Study Intersections



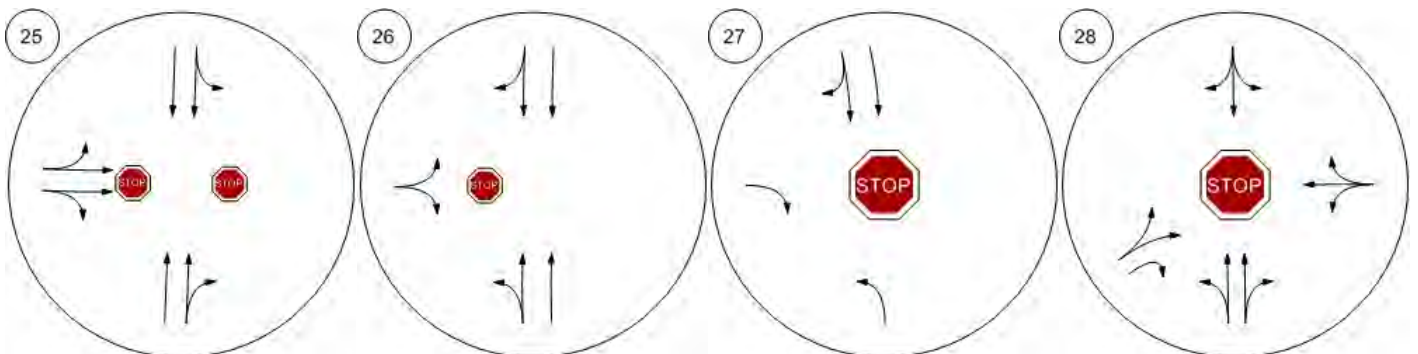
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ramp



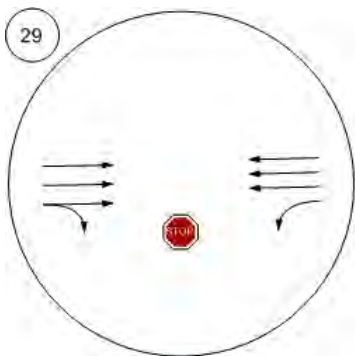
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



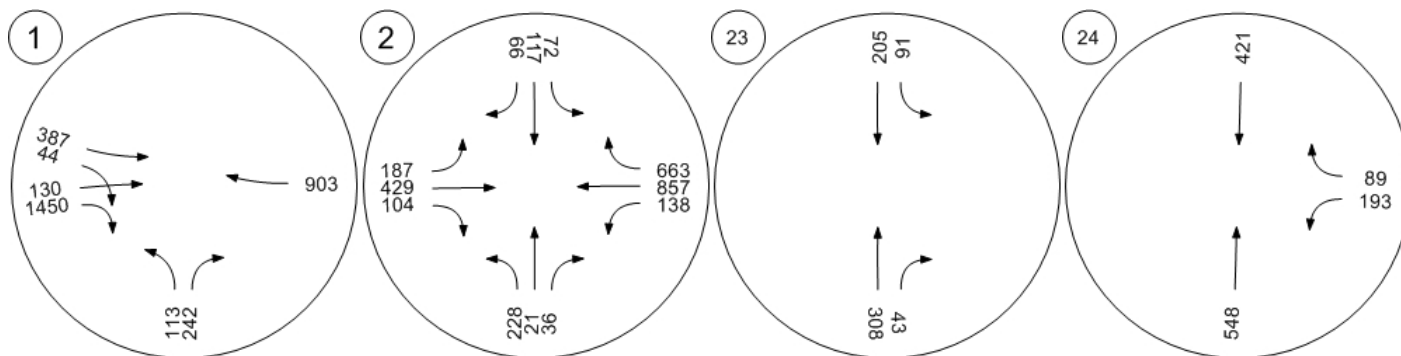
US 101 SB On-ramp & Suns



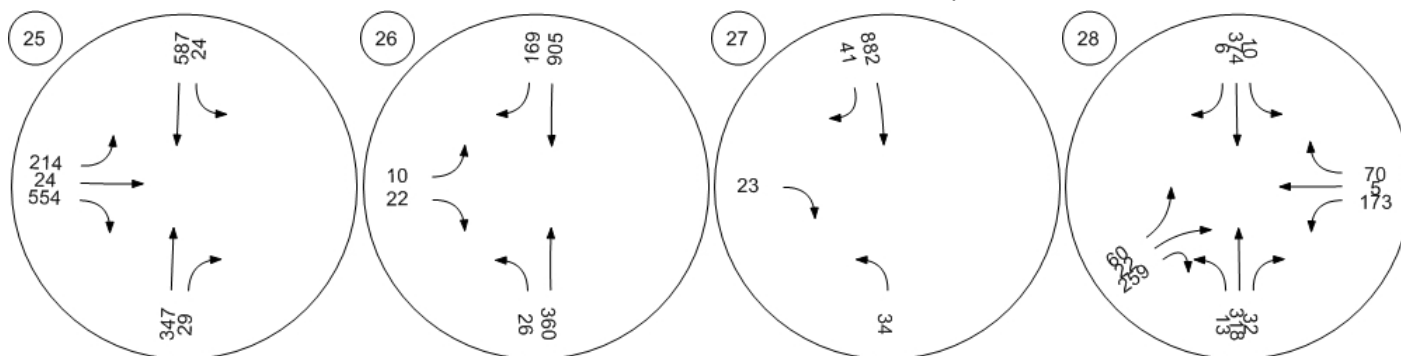
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



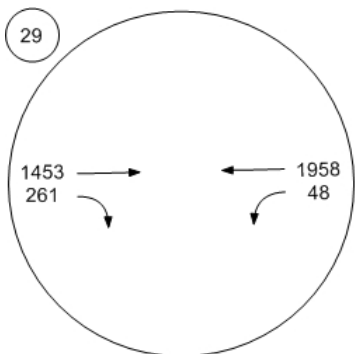
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Base Volume



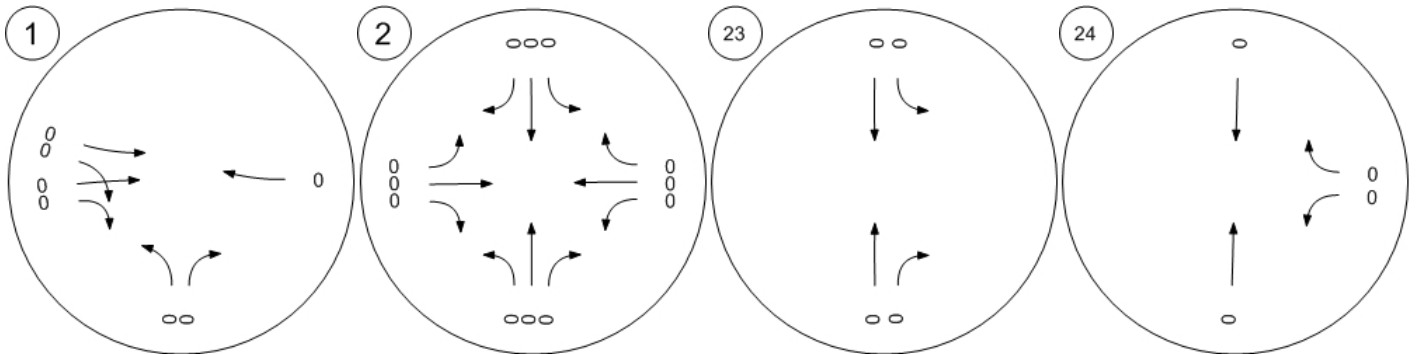
US 101 SB On-ramp & Suns



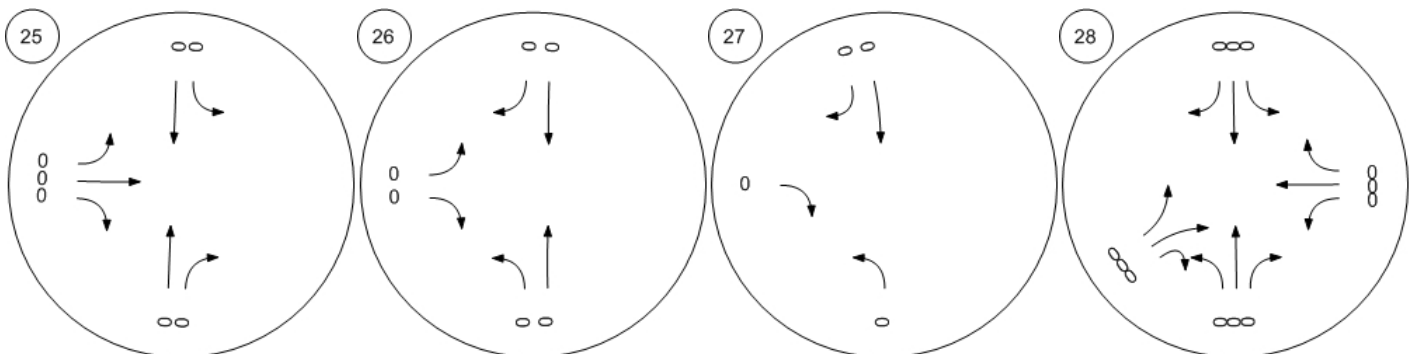
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



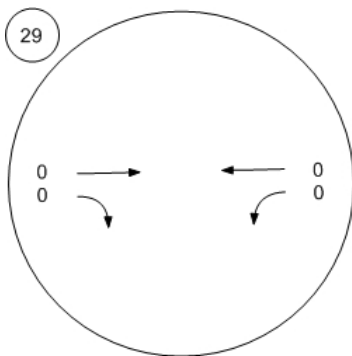
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



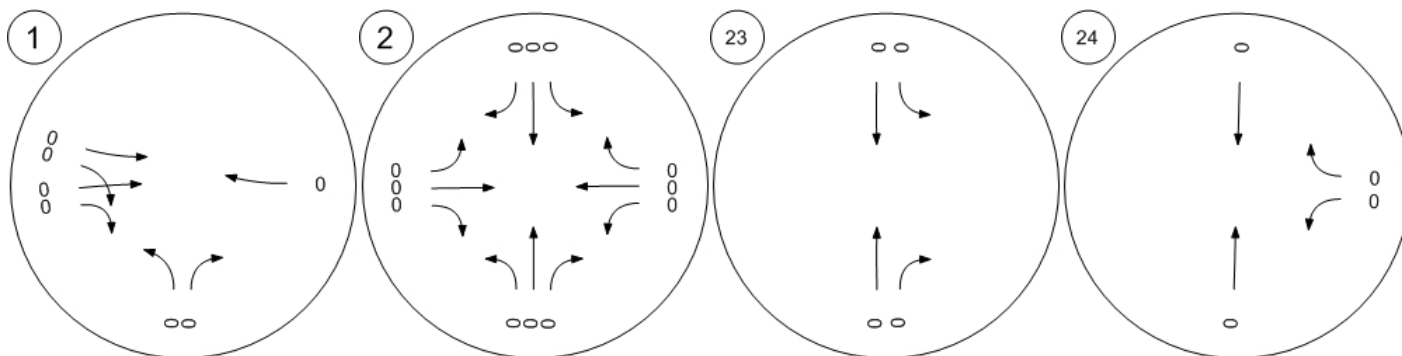
US 101 SB On-ramp & Suns



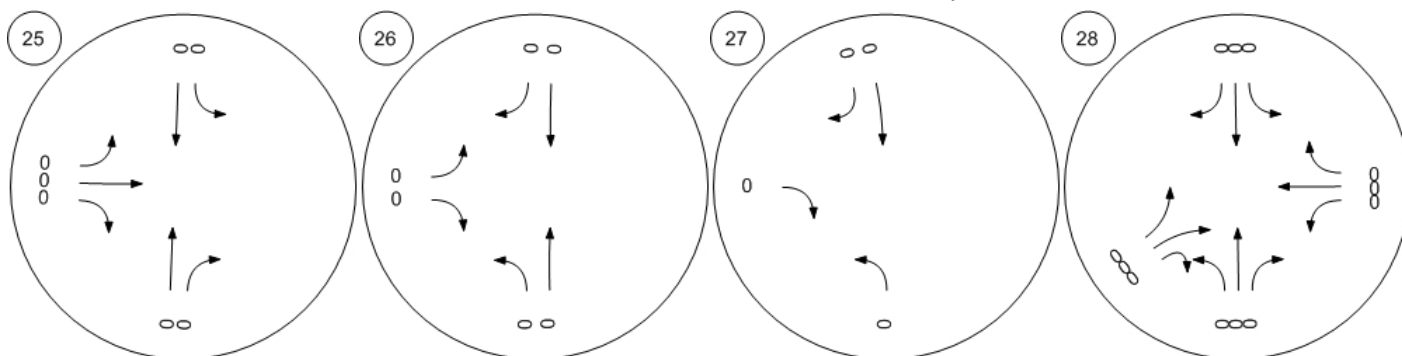
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



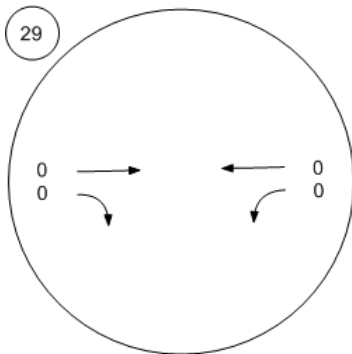
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



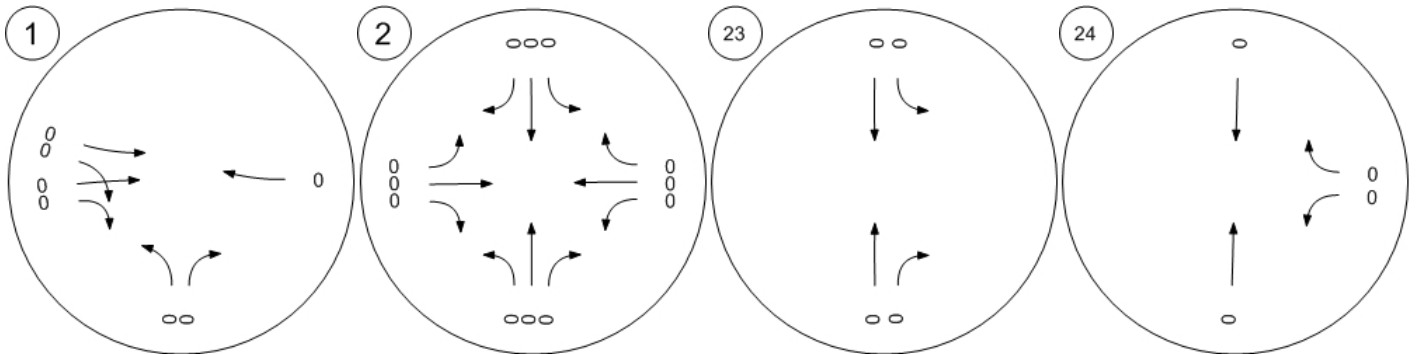
US 101 SB On-ramp & Suns



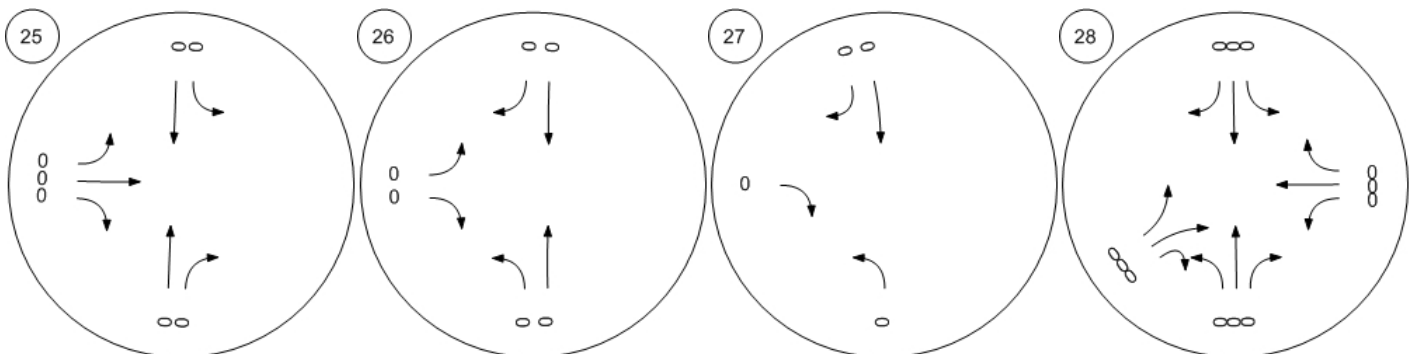
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



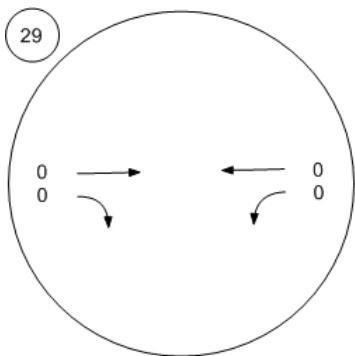
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



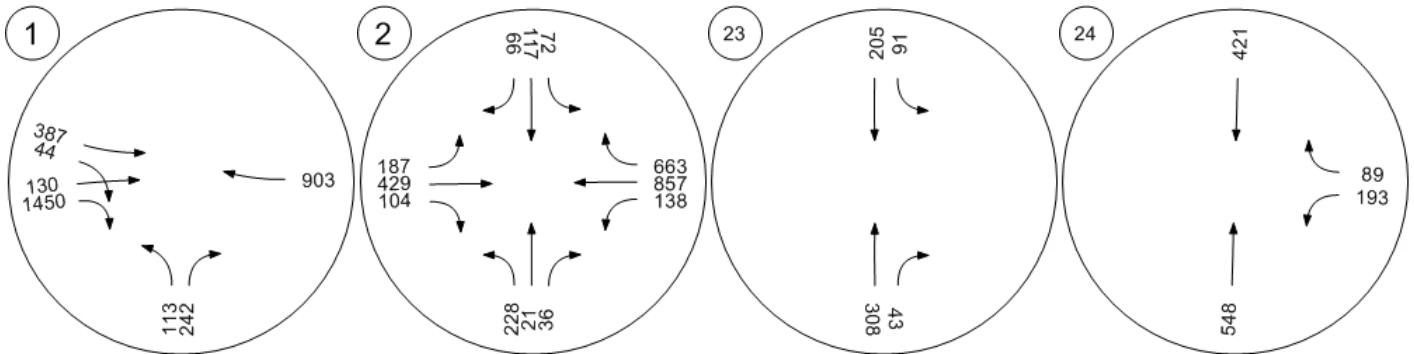
US 101 SB On-ramp & Suns



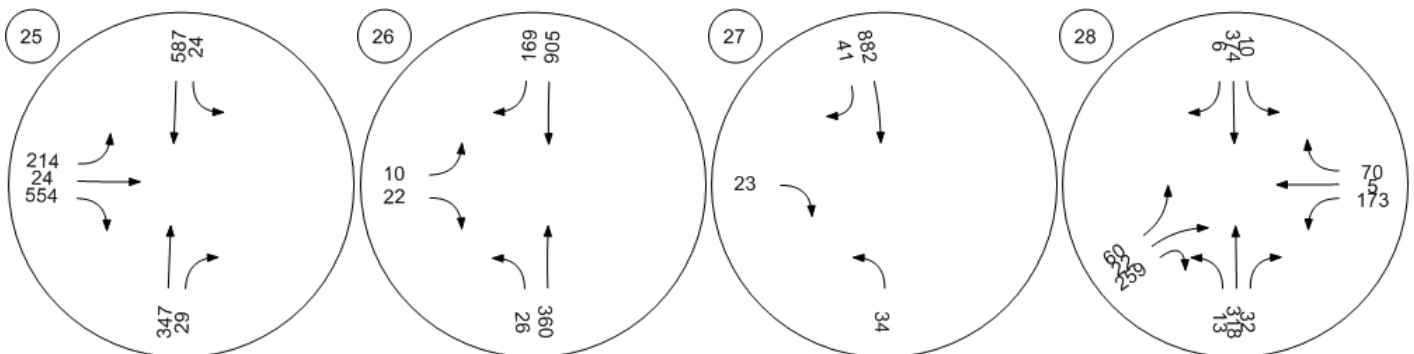
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



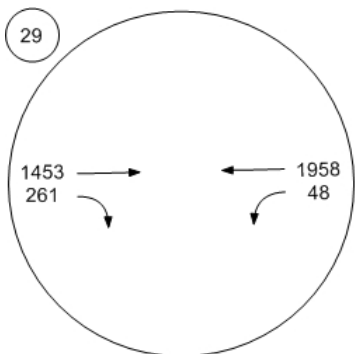
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



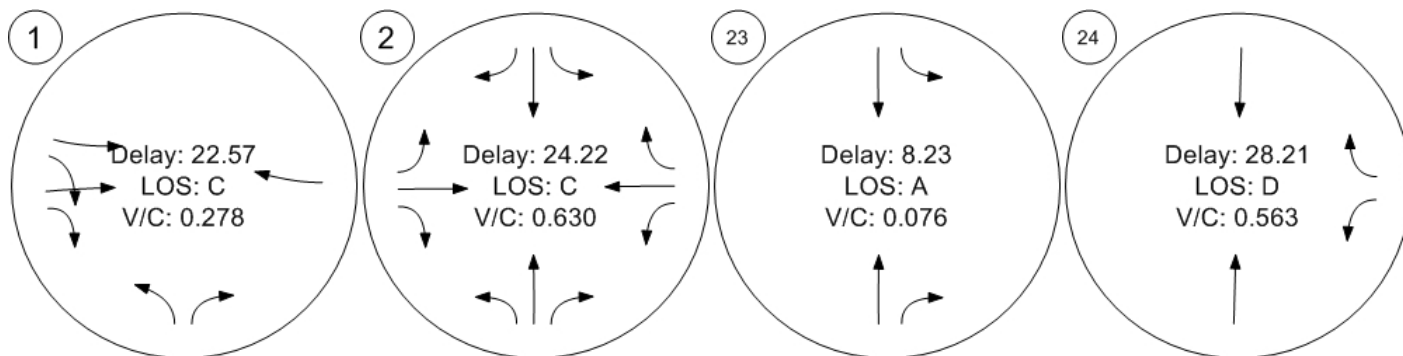
US 101 SB On-ramp & Suns



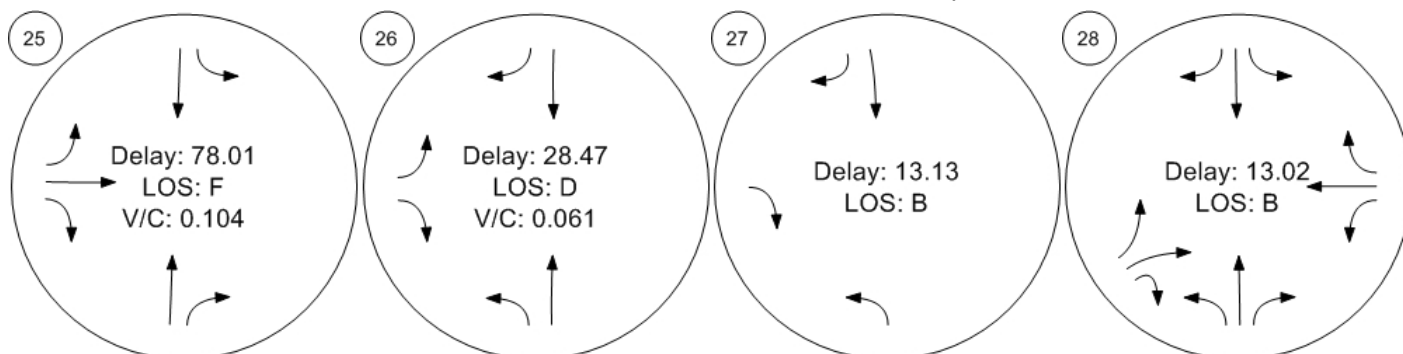
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

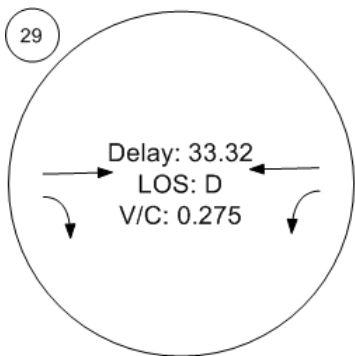


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 14: Supermarket - ExP PM

Report File: S:\...\Supermarket - ExPPM.pdf

5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.557	18.6	B
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Left	0.656	25.5	C
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.089	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.293	32.5	D
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Left	0.867	70.1	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.258	32.2	D
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		10.3	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.6	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.456	76.7	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 1: Vine & US 101 SB Off-ramp / Franklin**

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	0	90	133	0	15	0	0	149	0	73	218
Total Analysis Volume [veh/h]	466	0	360	533	0	58	0	0	597	0	291	871
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	0	56	0	56	0	0	75	0	19	15
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	20	20	43	19	82
g / C, Green / Cycle	0.43	0.43	0.22	0.22	0.48	0.21	0.91
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.15	0.04	0.17	0.16	0.55
s, saturation flow rate [veh/h]	1774	1601	3547	1583	3547	1863	1583
c, Capacity [veh/h]	769	694	776	346	1695	400	1443
d1, Uniform Delay [s]	19.02	19.32	32.35	28.54	14.76	32.92	0.39
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.85	3.50	1.09	0.23	0.12	2.54	1.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.58	0.69	0.17	0.35	0.73	0.60
d, Delay for Lane Group [s/veh]	21.87	22.82	33.44	28.76	14.88	35.45	2.28
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	6.90	6.72	5.34	1.02	3.69	6.06	0.75
50th-Percentile Queue Length [ft]	172.48	168.03	133.59	25.62	92.16	151.61	18.84
95th-Percentile Queue Length [veh]	11.21	10.97	9.13	1.84	6.64	10.10	1.36
95th-Percentile Queue Length [ft]	280.17	274.32	228.37	46.12	165.88	252.58	33.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.97	0.00	22.82	33.44	0.00	28.76	0.00	0.00	14.88	0.00	35.45	2.28
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	22.33			32.98			14.88			10.58		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.62											
Intersection LOS	B											
Intersection V/C	0.557											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	454	40	136	48	73	39	186	902	67	101	557	682
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	454	40	136	48	73	39	186	902	67	101	557	682
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	114	10	34	12	18	10	47	226	17	25	139	171
Total Analysis Volume [veh/h]	454	40	136	48	73	39	186	902	67	101	557	682
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	15	0	10	19	0	29	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	5	57	47	47	7	47	47
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.52	0.52	0.07	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.14	0.14	0.09	0.03	0.04	0.02	0.29	0.25	0.04	0.06	0.30	0.43
s, saturation flow rate [veh/h]	1774	1788	1583	1774	1863	1583	637	3547	1583	1774	1863	1583
c, Capacity [veh/h]	301	304	269	107	112	95	359	1835	819	133	976	829
d1, Uniform Delay [s]	36.04	36.04	33.96	40.89	41.41	40.79	16.72	14.07	10.95	40.88	14.58	17.95
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.40	5.34	1.47	2.93	6.21	2.79	5.26	0.94	0.20	8.60	2.42	9.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

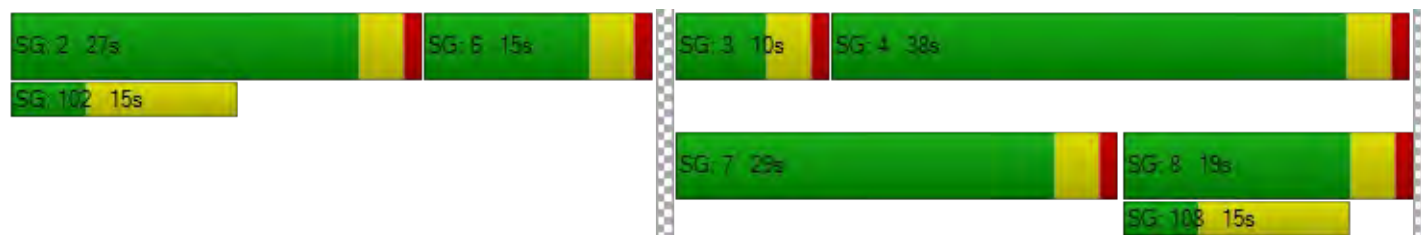
X, volume / capacity	0.82	0.82	0.51	0.45	0.65	0.41	0.52	0.49	0.08	0.76	0.57	0.82
d, Delay for Lane Group [s/veh]	41.44	41.38	35.43	43.82	47.62	43.58	21.98	15.01	11.15	49.48	17.00	26.98
Lane Group LOS	D	D	D	D	D	D	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.56	5.60	2.77	1.10	1.76	0.90	1.81	5.78	0.69	2.49	7.81	12.87
50th-Percentile Queue Length [ft]	139.09	139.96	69.28	27.62	44.02	22.47	45.27	144.59	17.14	62.19	195.31	321.72
95th-Percentile Queue Length [veh]	9.43	9.48	4.99	1.99	3.17	1.62	3.26	9.73	1.23	4.48	12.40	18.75
95th-Percentile Queue Length [ft]	235.80	236.96	124.70	49.72	79.24	40.45	81.49	243.19	30.86	111.94	309.91	468.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.41	41.38	35.43	43.82	47.62	43.58	21.98	15.01	11.15	49.48	17.00	26.98
Movement LOS	D	D	D	D	D	D	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	40.12			45.50			15.91			24.53		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	25.51											
Intersection LOS	C											
Intersection V/C	0.656											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	686	90	74	128	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	686	90	74	128	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	172	23	19	32	0	0
Total Analysis Volume [veh/h]	686	90	74	128	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.72	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.26	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.56		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	32.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.293

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1034	0	0	285	54	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1034	0	0	285	54	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	259	0	0	71	14	21
Total Analysis Volume [veh/h]	1034	0	0	285	54	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0


Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.29	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	32.47	13.58
Movement LOS	A			A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.16	0.59
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	29.05	14.86
d_A, Approach Delay [s/veh]	0.00		0.00		20.97	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	70.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	185	4	3	82	0	68	3	70	0	0	0
Total Analysis Volume [veh/h]	0	740	15	11	326	0	271	13	279	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.00	0.00	0.87	0.06	0.33	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.28	0.00	0.00	70.09	66.12	11.43	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.73	0.37	0.00	8.82	5.16	1.51	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	18.35	9.18	0.00	220.52	129.10	37.67	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.30			40.93			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	13.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	32.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.258

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	82	758	553	45	44	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	758	553	45	44	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	190	138	11	11	12
Total Analysis Volume [veh/h]	82	758	553	45	44	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	0.26	0.07
d_M, Delay for Movement [s/veh]	9.03	0.00	0.00	0.00	32.23	16.26
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	2.20	1.10	0.00	0.00	1.37	1.37
95th-Percentile Queue Length [ft]	55.03	27.52	0.00	0.00	34.24	34.24
d_A, Approach Delay [s/veh]	0.88		0.00		23.99	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	D					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

10.3
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	111	0	671	3	0	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	0	671	3	0	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	168	1	0	6
Total Analysis Volume [veh/h]	111	0	671	3	0	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.44	2.22	2.22	0.08
95th-Percentile Queue Length [ft]	11.05	55.61	55.49	1.91
Approach Delay [s/veh]	7.80	10.88		6.68
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.33			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.6
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	12	7	1	8	0	4	0	0	0	0
Total Analysis Volume [veh/h]	9	0	49	28	2	32	0	15	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.16	0.18	
95th-Percentile Queue Length [ft]	4.69	4.12	4.55	
Approach Delay [s/veh]	7.63		7.47	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.64			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	78	0	2	32	0	14	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	2	32	0	14	9	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	1	8	0	4	2	12
Total Analysis Volume [veh/h]	78	0	2	32	0	14	9	49
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.45	0.10	0.18
95th-Percentile Queue Length [ft]	11.24	2.59	4.57
Approach Delay [s/veh]	7.84	7.48	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.64		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	76.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1953	349	40	1541
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1953	349	40	1541
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	488	87	10	385
Total Analysis Volume [veh/h]	0	0	1953	349	40	1541
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.46	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	76.74	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.91	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	47.70	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.94	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	F					

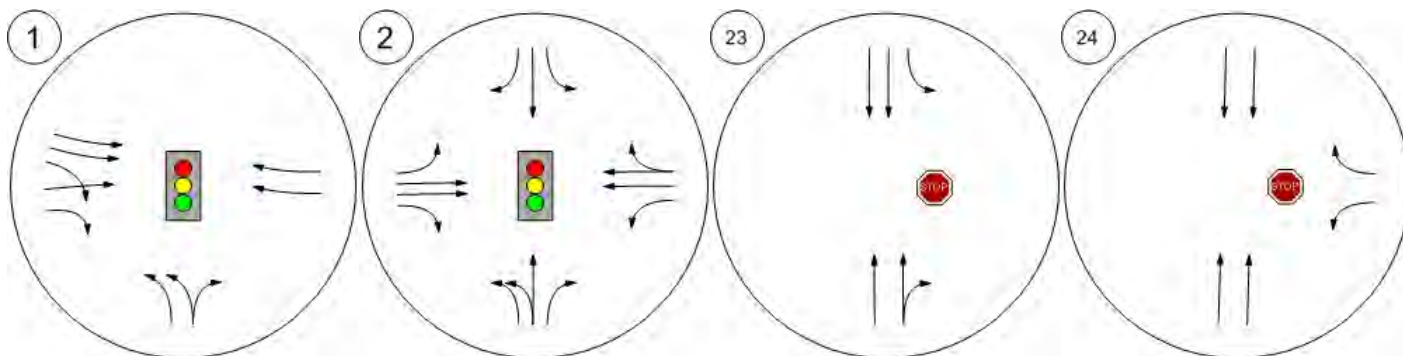
Study Intersections



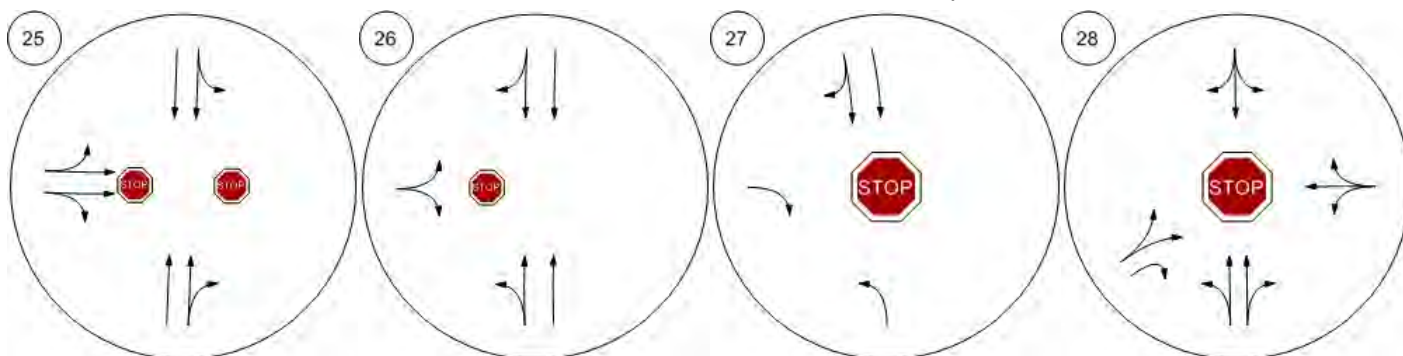
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ramp



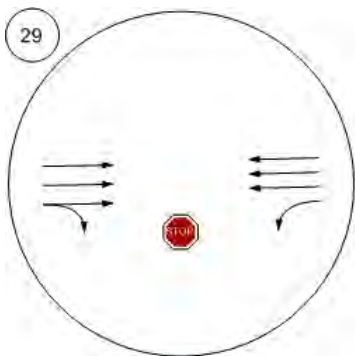
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



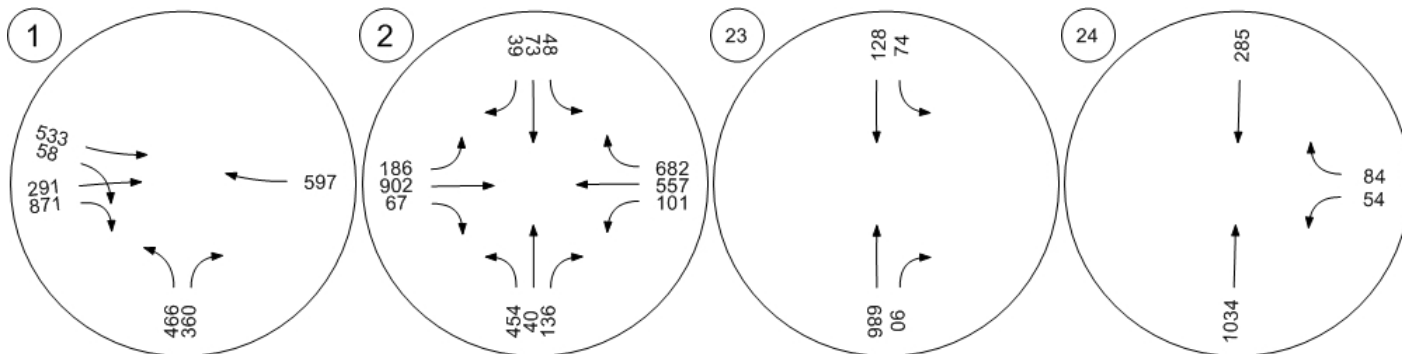
US 101 SB On-ramp & Suns



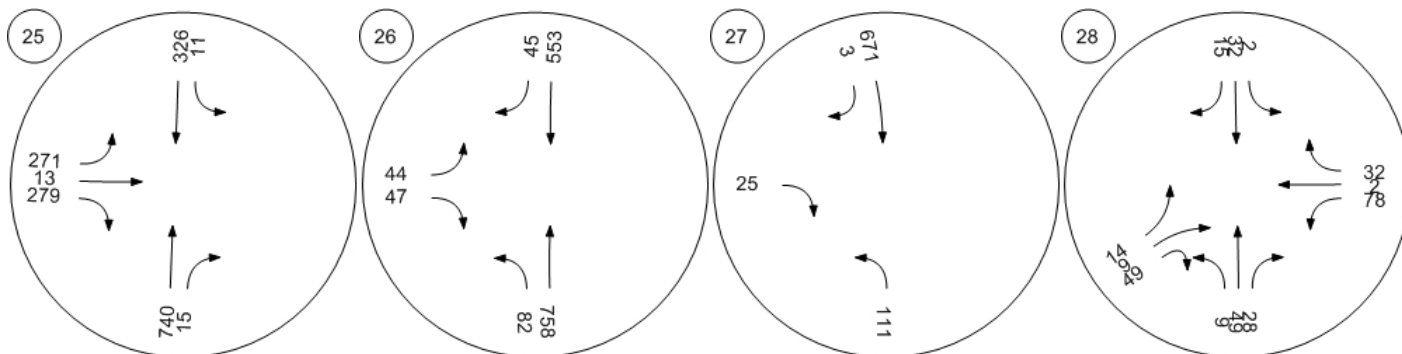
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



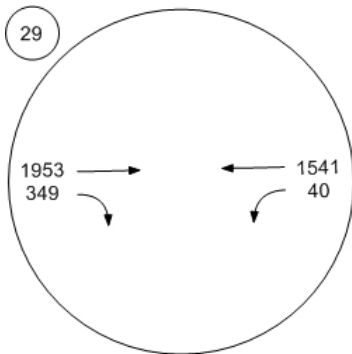
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Base Volume



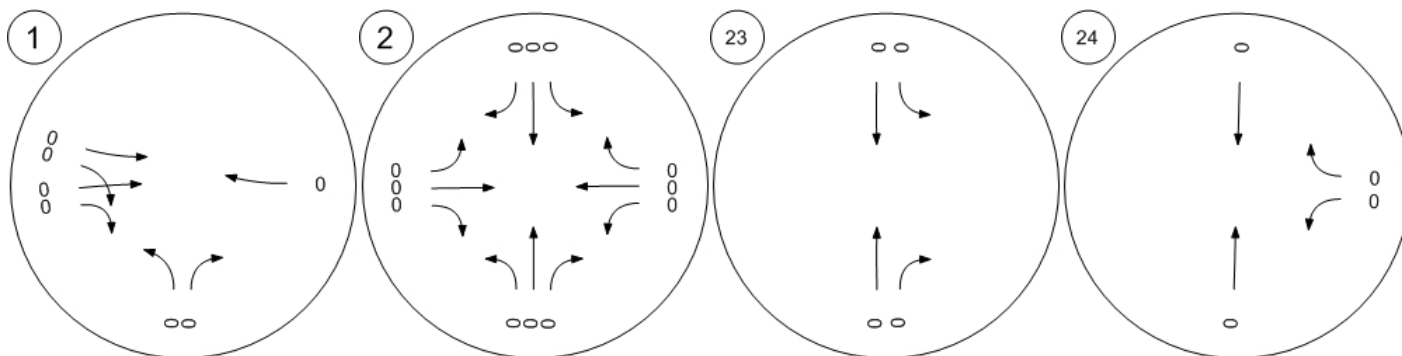
US 101 SB On-ramp & Suns



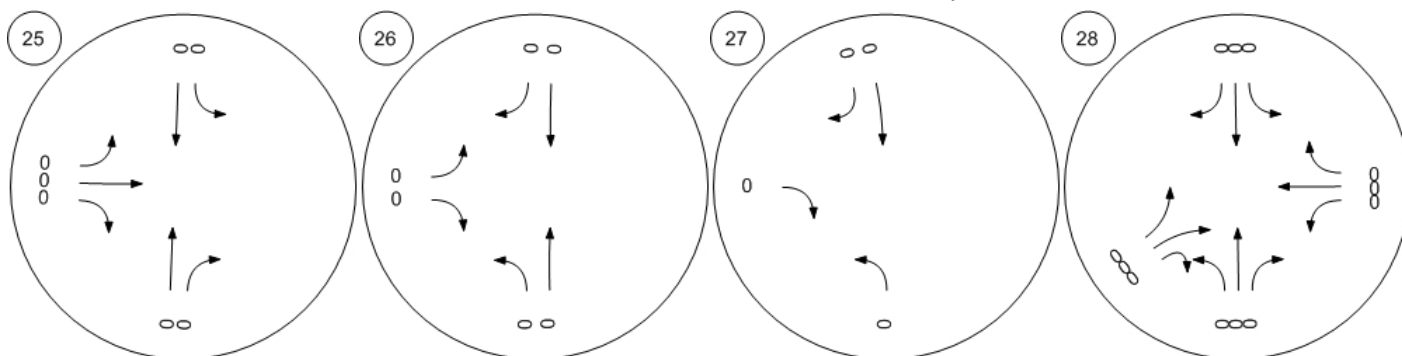
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



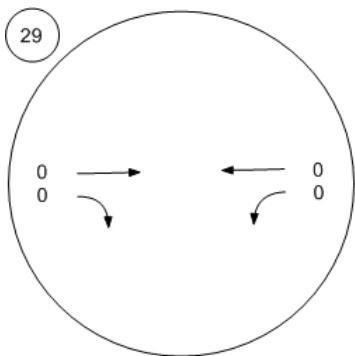
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



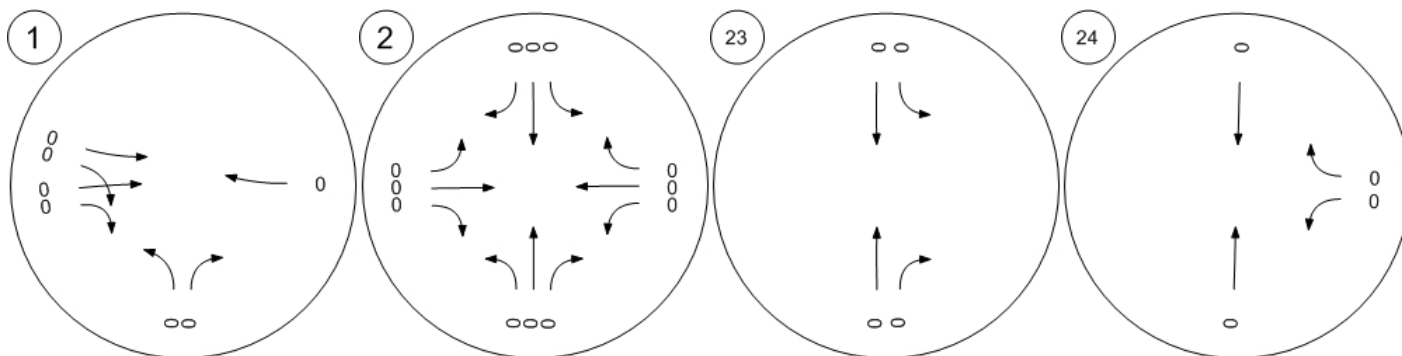
US 101 SB On-ramp & Suns



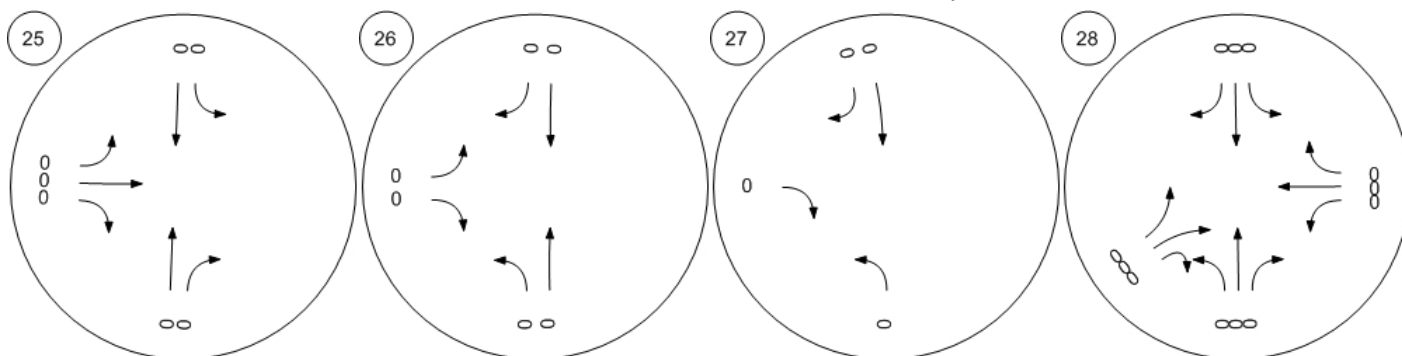
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



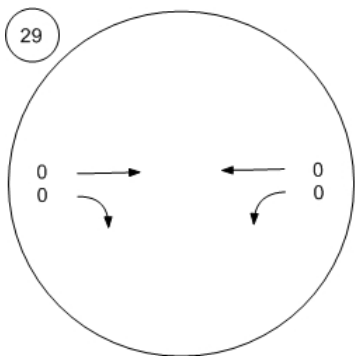
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



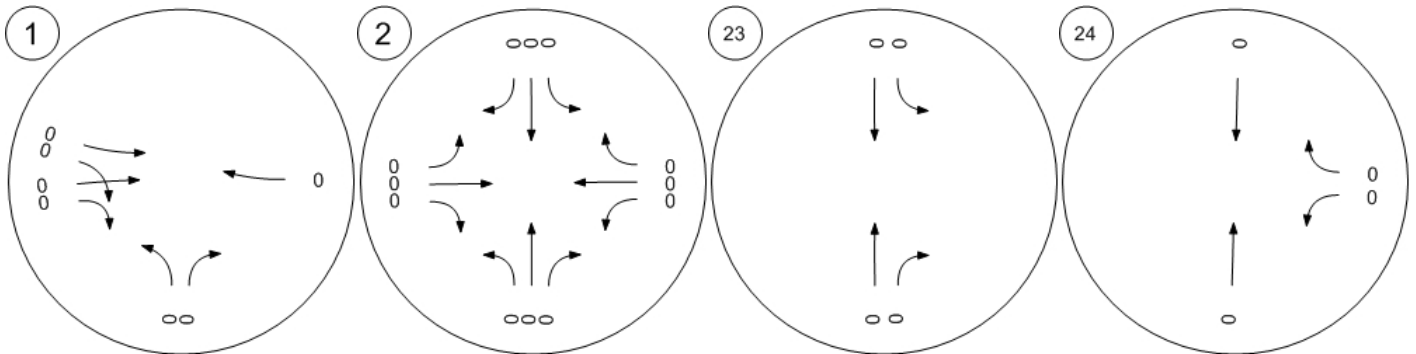
US 101 SB On-ramp & Suns



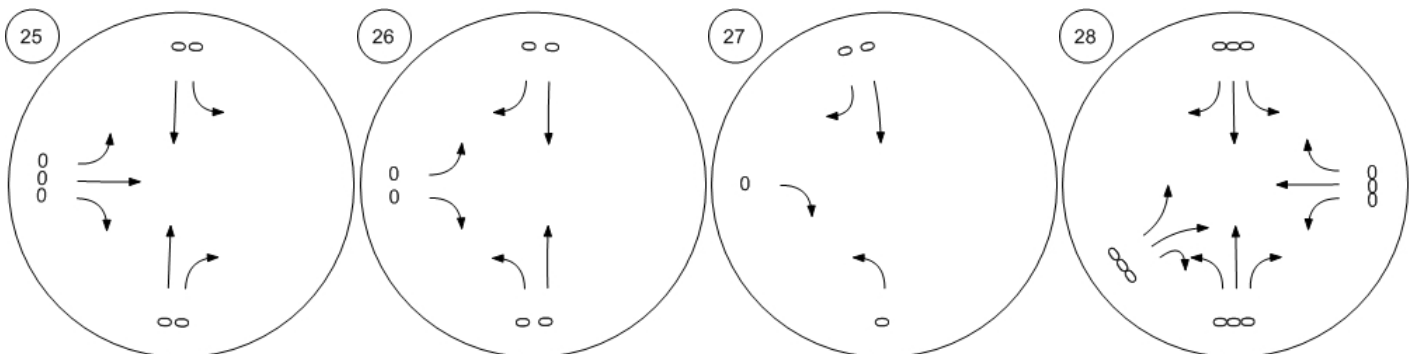
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



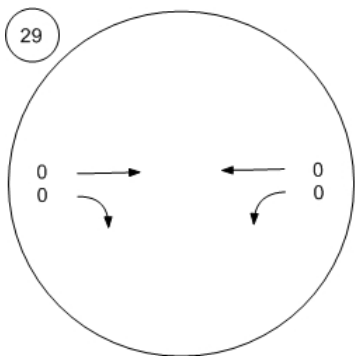
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



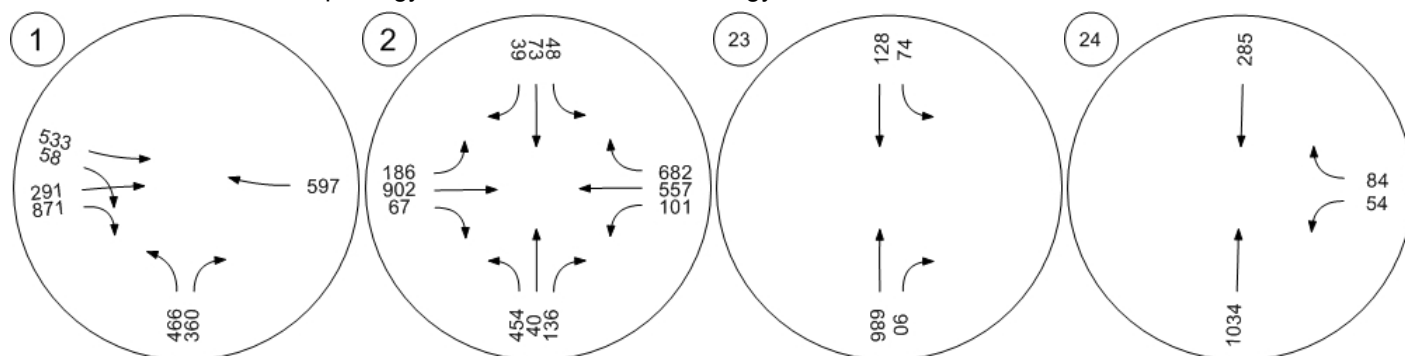
US 101 SB On-ramp & Suns



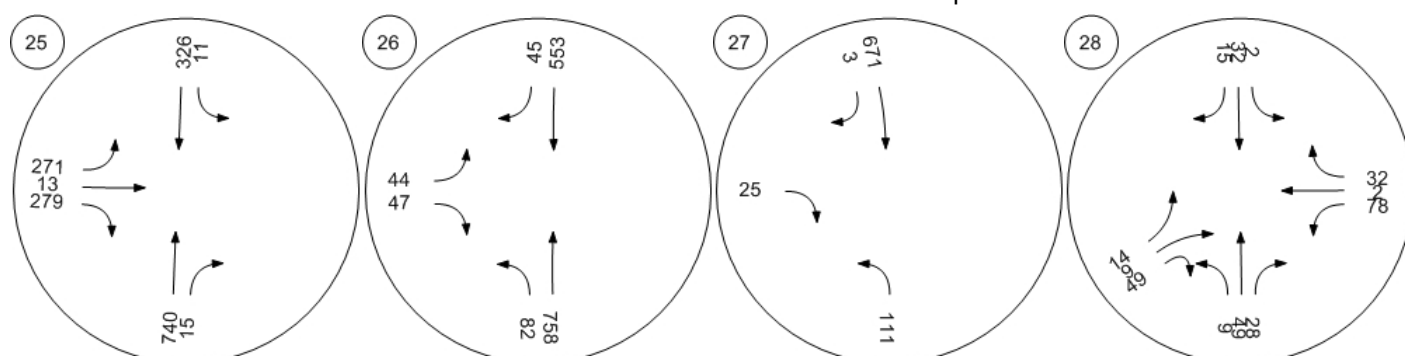
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



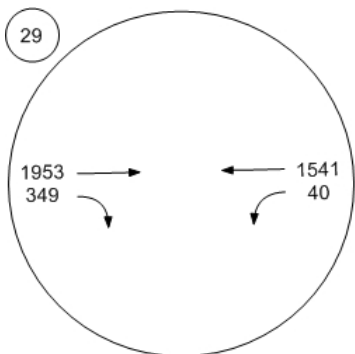
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



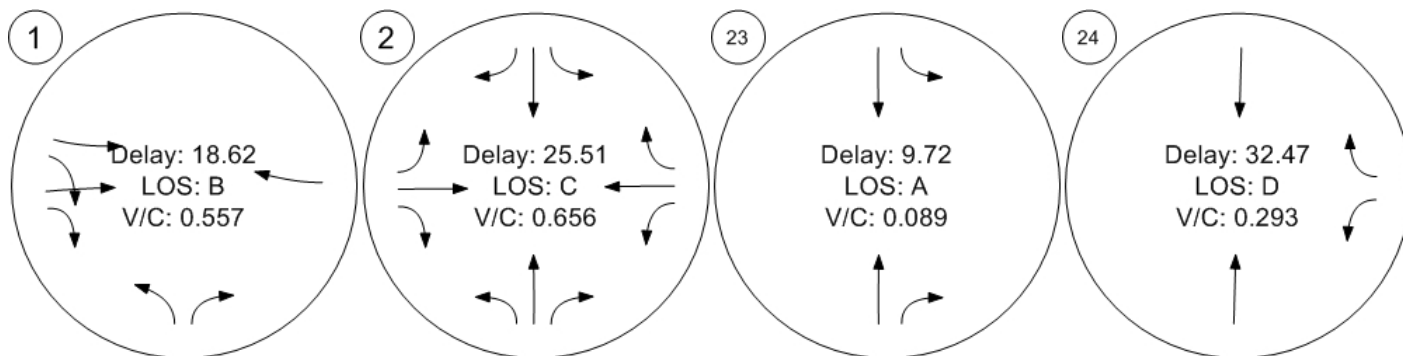
US 101 SB On-ramp & Suns



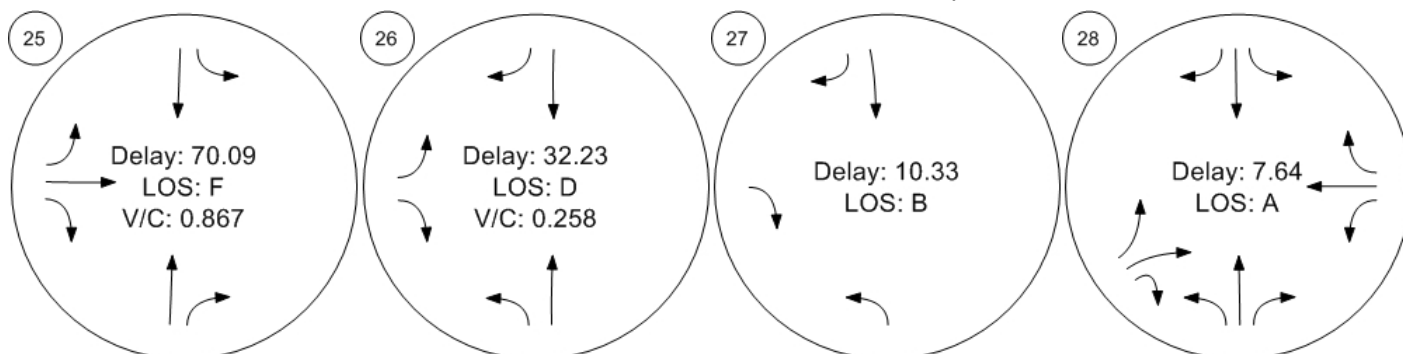
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

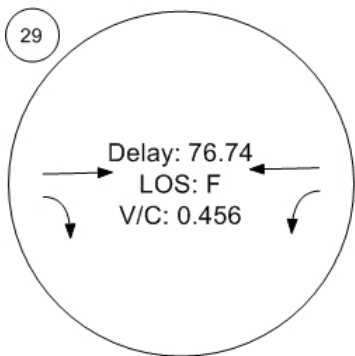


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 15: Supermarket - FP 2023 AM

Report File: S:\...\Supermarket - FP2023AM.pdf

5/19/2017

Intersection Analysis Summary





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.535	45.3	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	0.744	40.8	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.096	8.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.825	54.5	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.133	166.4	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.090	36.9	E
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		14.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru		14.3	B
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	0.595	78.7	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	45.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1624
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1624
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	0	73	119	0	15	0	0	247	0	35	406
Total Analysis Volume [veh/h]	131	0	293	474	0	61	0	0	989	0	138	1624
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.17	0.17	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.07	0.19	0.13	0.04	0.28	0.07	1.03
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	847	586	261	1335	311	1443
d1, Uniform Delay [s]	10.52	11.96	36.21	32.63	24.26	33.73	3.28
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	1.12	2.73	0.45	0.83	0.99	66.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.35	0.81	0.23	0.74	0.44	1.13
d, Delay for Lane Group [s/veh]	10.83	13.08	38.94	33.08	25.09	34.73	69.41
Lane Group LOS	B	B	D	C	C	C	F
Critical Lane Group	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.32	3.41	5.14	1.17	8.86	2.76	26.50
50th-Percentile Queue Length [ft]	33.00	85.37	128.60	29.36	221.38	68.95	662.58
95th-Percentile Queue Length [veh]	2.38	6.15	8.86	2.11	13.74	4.96	38.81
95th-Percentile Queue Length [ft]	59.39	153.67	221.59	52.84	343.39	124.10	970.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.83	0.00	13.08	38.94	0.00	33.08	0.00	0.00	25.09	0.00	34.73	69.41
Movement LOS	B		B	D		C			C		C	F
d_A, Approach Delay [s/veh]	12.38			38.28			25.09			66.70		
Approach LOS	B			D			C			E		
d_I, Intersection Delay [s/veh]	45.30											
Intersection LOS	D											
Intersection V/C	0.535											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	40.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.744

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	308	23	38	76	125	70	265	481	116	146	947	733
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	23	38	76	125	70	265	481	116	146	947	733
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	6	10	19	31	18	66	120	29	37	237	183
Total Analysis Volume [veh/h]	308	23	38	76	125	70	265	481	116	146	947	733
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	21	0	35	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	8	8	8	59	46	46	9	45	45
g / C, Green / Cycle	0.12	0.12	0.12	0.09	0.09	0.09	0.66	0.51	0.51	0.10	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.02	0.04	0.07	0.04	0.44	0.14	0.07	0.08	0.46	0.51
s, saturation flow rate [veh/h]	1774	1786	1583	1774	1863	1583	604	3547	1583	1774	1863	1610
c, Capacity [veh/h]	209	211	187	163	171	145	370	1802	804	186	926	800
d1, Uniform Delay [s]	38.67	38.67	35.94	38.86	39.87	38.92	25.81	12.63	11.78	39.37	21.09	22.68
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.47	6.42	0.53	2.08	5.91	2.47	11.31	0.36	0.38	7.12	16.03	40.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.79	0.20	0.47	0.73	0.48	0.72	0.27	0.14	0.79	0.92	1.03
d, Delay for Lane Group [s/veh]	45.14	45.09	36.47	40.94	45.79	41.38	37.13	12.99	12.15	46.49	37.12	62.70
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.87	3.89	0.78	1.67	2.94	1.55	2.93	2.71	1.26	3.48	19.48	24.35
50th-Percentile Queue Length [ft]	96.72	97.26	19.38	41.75	73.52	38.83	73.26	67.63	31.51	86.88	486.89	608.80
95th-Percentile Queue Length [veh]	6.96	7.00	1.40	3.01	5.29	2.80	5.27	4.87	2.27	6.26	26.71	33.23
95th-Percentile Queue Length [ft]	174.10	175.06	34.88	75.16	132.33	69.90	131.87	121.73	56.71	156.38	667.83	830.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.11	45.09	36.47	40.94	45.79	41.38	37.13	12.99	12.15	46.49	39.60	62.70
Movement LOS	D	D	D	D	D	D	D	B	B	D	D	E
d_A, Approach Delay [s/veh]	44.22			43.29			20.30			49.43		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	40.80											
Intersection LOS	D											
Intersection V/C	0.744											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.096

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	394	96	103	220	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	394	96	103	220	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	24	26	55	0	0
Total Analysis Volume [veh/h]	394	96	103	220	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.72	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.32	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	7.97	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		2.78		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	54.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	612	0	0	454	251	105
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	612	0	0	454	251	105
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	0	0	114	63	26
Total Analysis Volume [veh/h]	612	0	0	454	251	105
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.82	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	54.46	11.15
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.92	0.53
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	173.03	13.37
d_A, Approach Delay [s/veh]	0.00		0.00		41.68	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	10.44					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	166.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	399	31	25	676	0	227	25	641	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	399	31	25	676	0	227	25	641	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	100	8	6	169	0	57	6	160	0	0	0
Total Analysis Volume [veh/h]	0	399	31	25	676	0	227	25	641	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00	1.04	0.13	0.97	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.27	0.00	0.00	163.81	166.39	54.04	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.34	0.67	0.00	12.37	13.43	14.49	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	33.44	16.72	0.00	309.35	335.77	362.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.29			85.09			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	37.64											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	36.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	31	413	1003	244	11	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	413	1003	244	11	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	103	251	61	3	7
Total Analysis Volume [veh/h]	31	413	1003	244	11	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.00	0.09	0.06
d_M, Delay for Movement [s/veh]	11.88	0.00	0.00	0.00	36.89	15.98
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh]	1.92	0.96	0.00	0.00	0.53	0.53
95th-Percentile Queue Length [ft]	47.94	23.97	0.00	0.00	13.23	13.23
d_A, Approach Delay [s/veh]	0.83		0.00		22.04	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	E					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

14.5
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	37	0	958	44	0	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	0	958	44	0	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	240	11	0	6
Total Analysis Volume [veh/h]	37	0	958	44	0	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.13	4.71	4.58	0.07
95th-Percentile Queue Length [ft]	3.36	117.81	114.40	1.75
Approach Delay [s/veh]	7.37	14.91		6.50
Approach LOS	A	B		A
Intersection Delay [s/veh]	14.46			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 14.3
 Level Of Service: B

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	86	9	3	101	0	2	0	0	0	0
Total Analysis Volume [veh/h]	14	0	343	34	11	405	0	6	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.40	1.34	4.55	
95th-Percentile Queue Length [ft]	34.89	33.59	113.64	
Approach Delay [s/veh]	11.30		17.38	0.00
Approach LOS	B		C	A
Intersection Delay [s/veh]	14.32			
Intersection LOS	B			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	184	0	5	74	0	64	23	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	0	5	74	0	64	23	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	0	1	19	0	16	6	70
Total Analysis Volume [veh/h]	184	0	5	74	0	64	23	281
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.16	0.66	2.84
95th-Percentile Queue Length [ft]	54.12	16.57	70.95
Approach Delay [s/veh]	13.30	14.77	
Approach LOS	B	B	
Intersection Delay [s/veh]	14.32		
Intersection LOS	B		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	78.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	1656	472	64	2502
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1656	472	64	2502
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	414	118	16	626
Total Analysis Volume [veh/h]	0	0	1656	472	64	2502
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.59	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	78.67	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.88	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	72.01	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		1.96	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.07					
Intersection LOS	F					

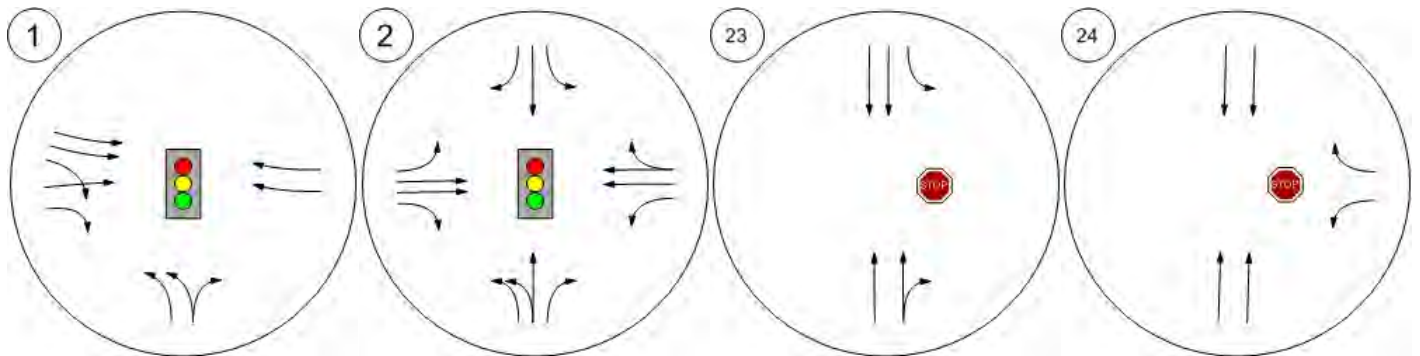
Study Intersections



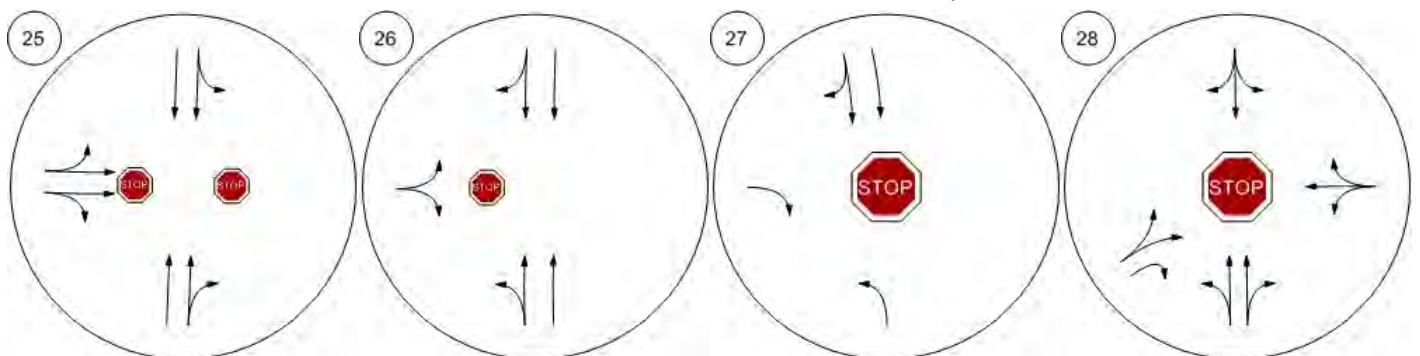
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



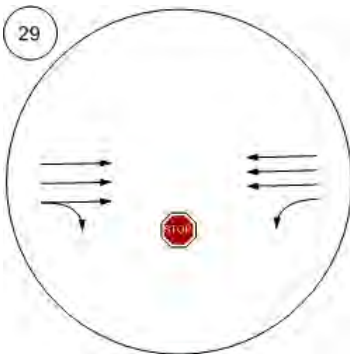
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



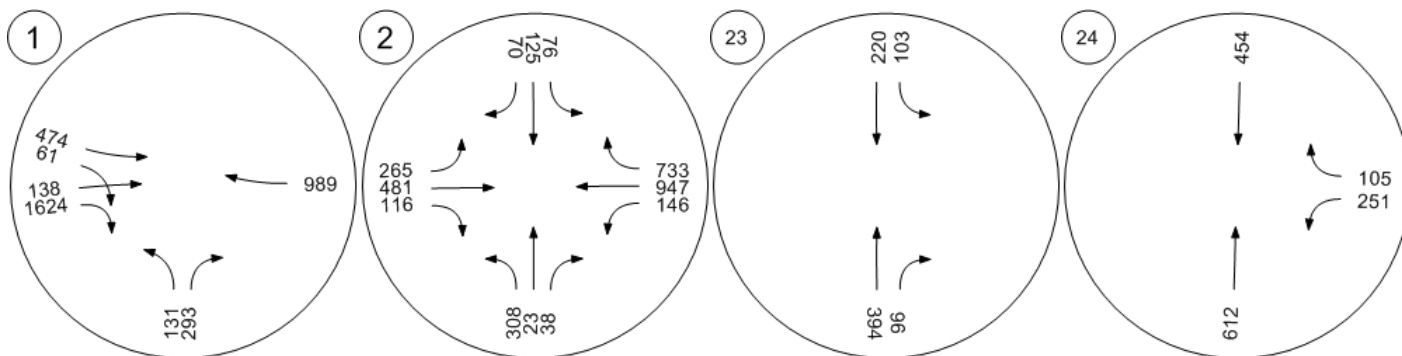
US 101 SB On-ramp & Suns



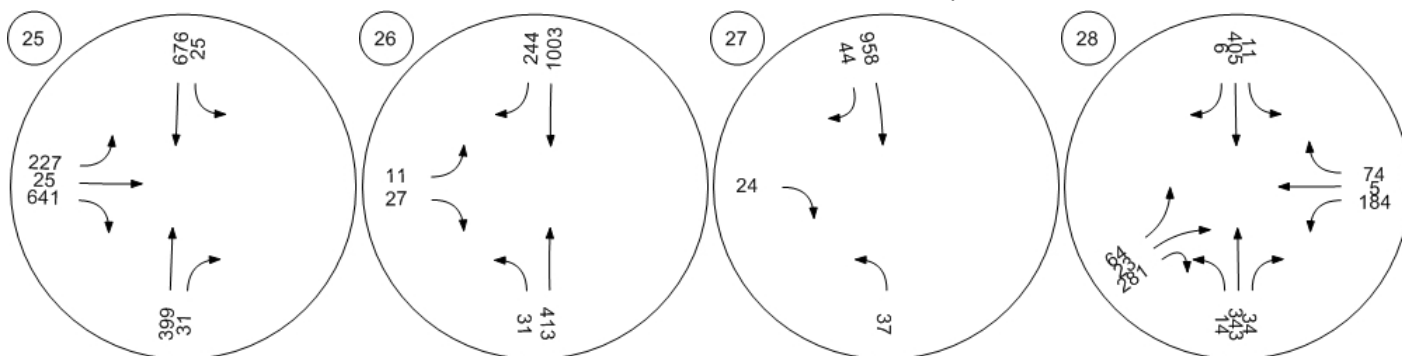
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



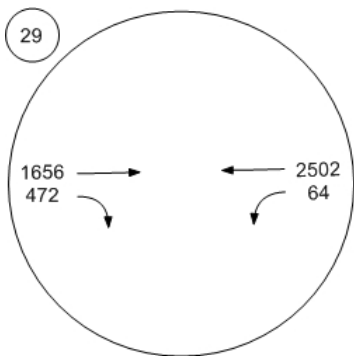
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



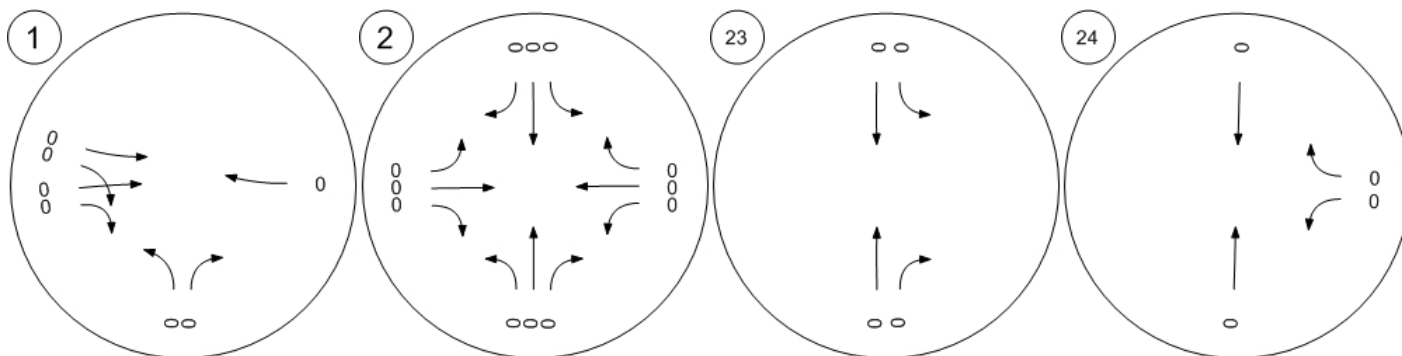
US 101 SB On-ramp & Suns



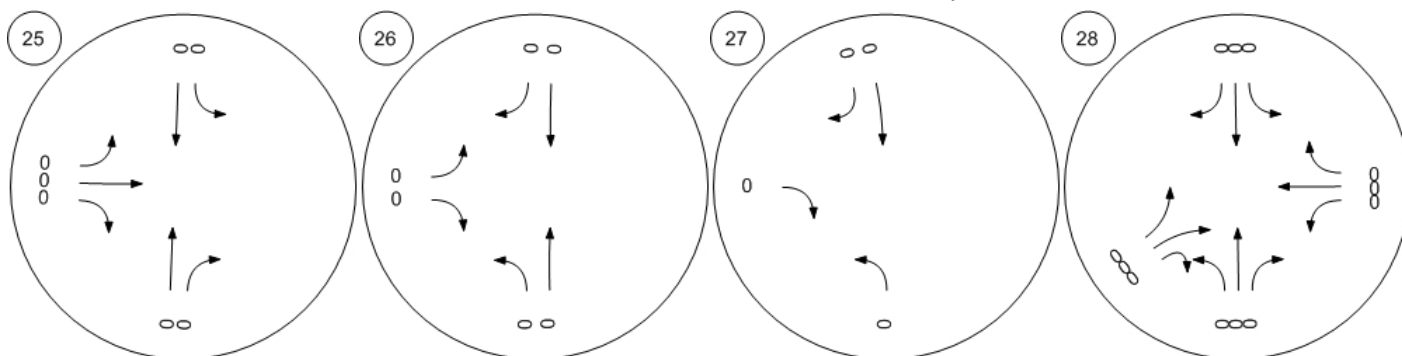
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



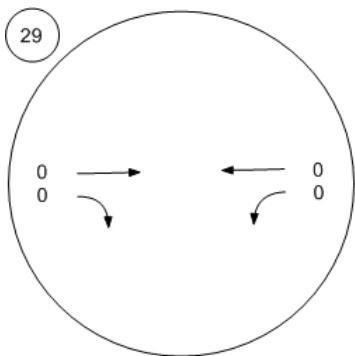
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



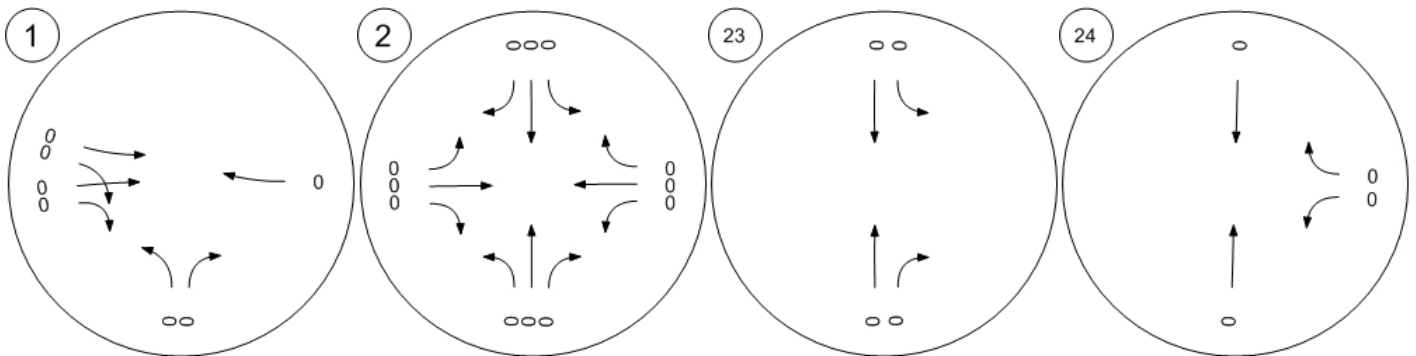
US 101 SB On-ramp & Suns



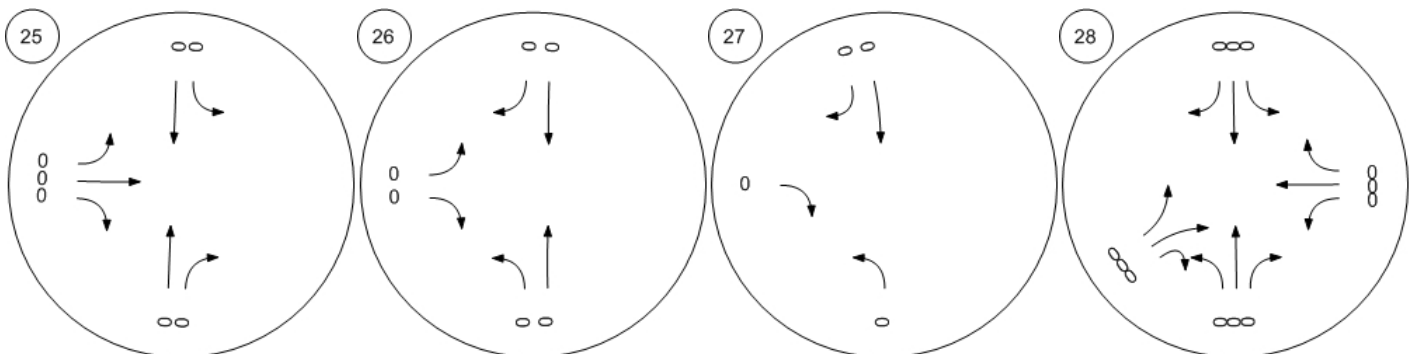
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



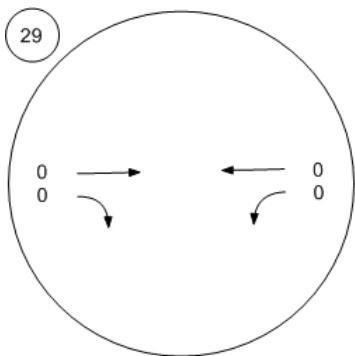
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



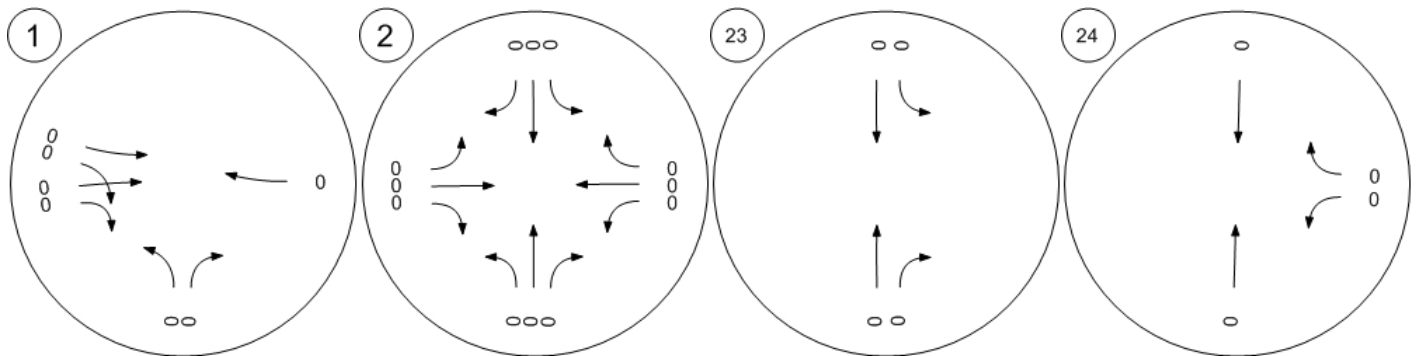
US 101 SB On-ramp & Suns



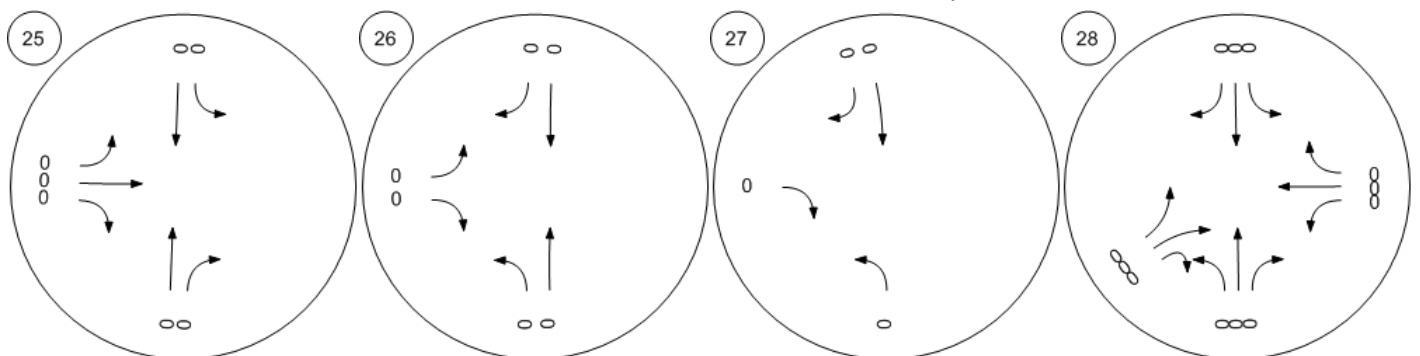
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



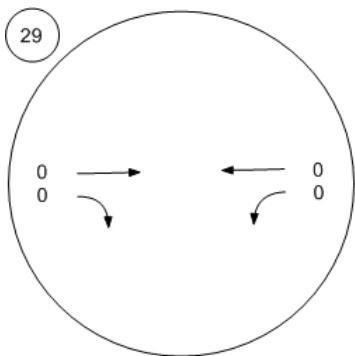
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



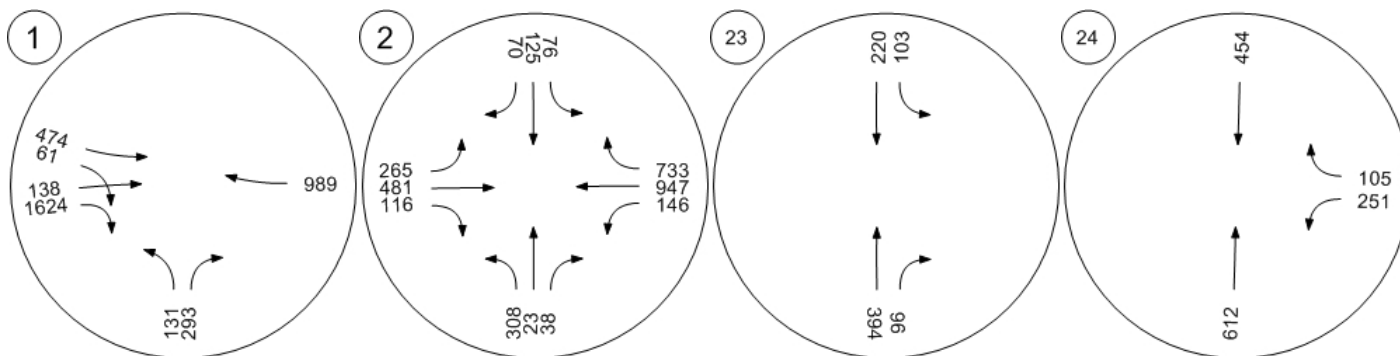
US 101 SB On-ramp & Suns



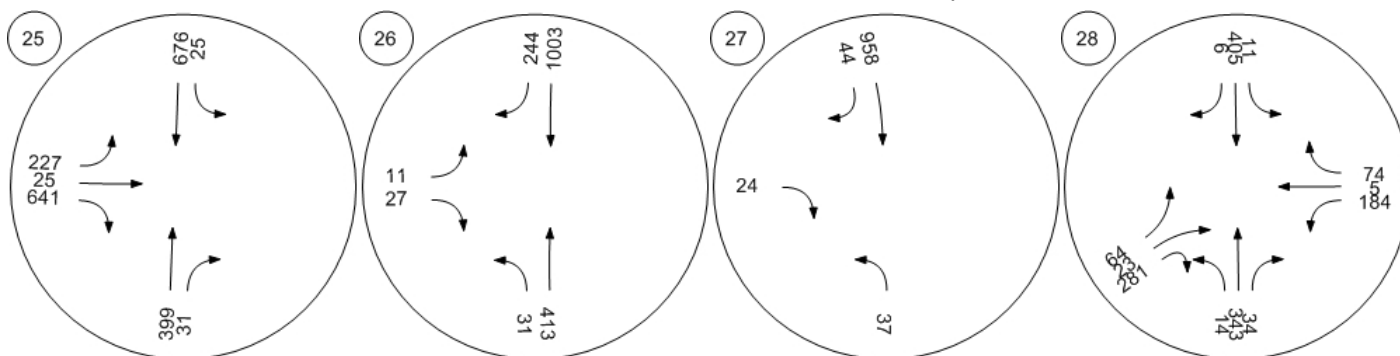
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



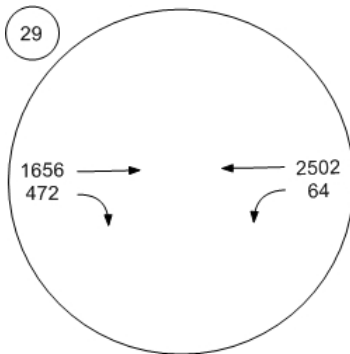
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



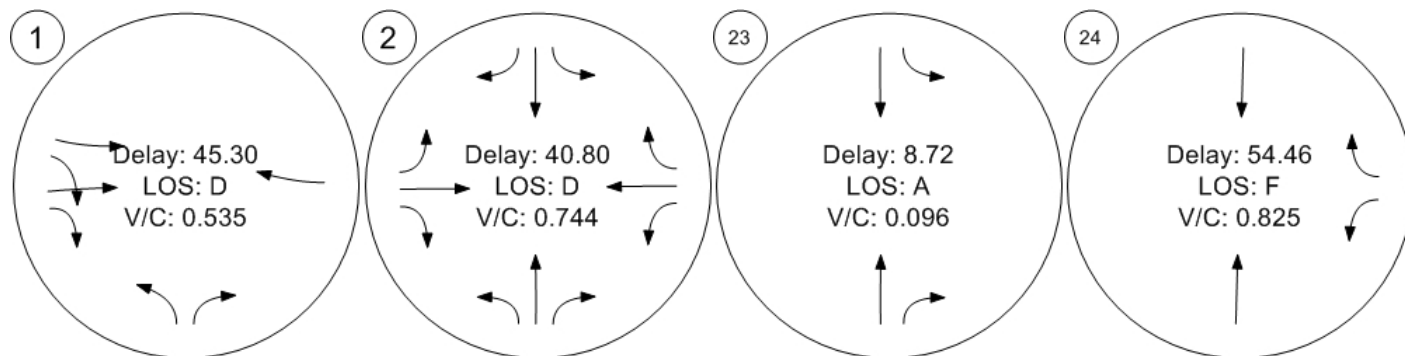
US 101 SB On-ramp & Suns



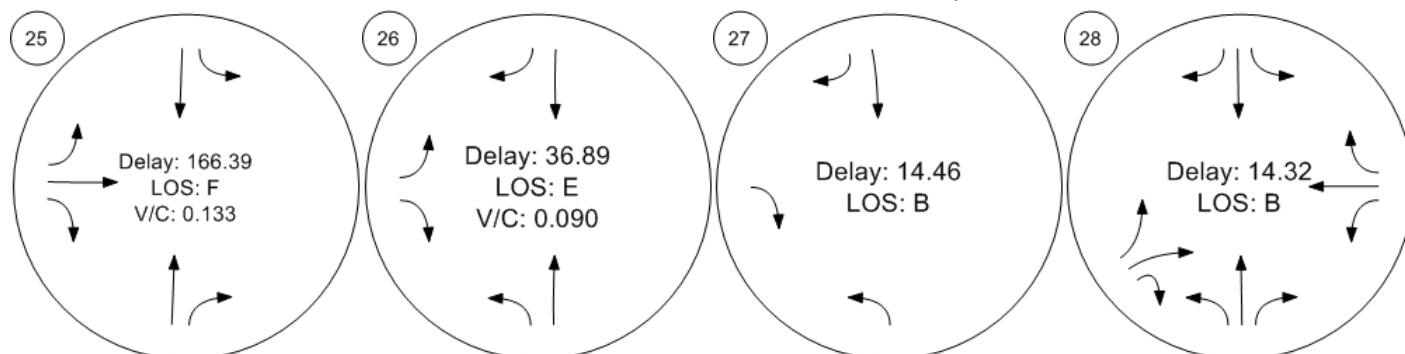
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

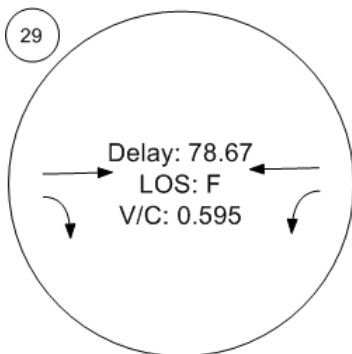


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 16: Supermarket - FP 2023 PM

Report File: S:\...\Supermarket - FP2023PM.pdf

5/19/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Thru	0.491	20.5	C
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	0.786	42.6	D
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.128	10.7	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	0.874	102.0	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.091	207.8	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.406	52.1	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru		11.0	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left		7.8	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.572	509.7	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	0	109	169	0	20	0	0	170	0	77	260
Total Analysis Volume [veh/h]	518	0	437	674	0	81	0	0	681	0	309	1041
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35	22	22	47	20	82
g / C, Green / Cycle	0.39	0.39	0.25	0.25	0.52	0.22	0.91
(v / s)_i Volume / Saturation Flow Rate	0.27	0.30	0.19	0.05	0.19	0.17	0.66
s, saturation flow rate [veh/h]	1774	1597	3547	1583	3547	1863	1583
c, Capacity [veh/h]	696	627	885	395	1840	419	1443
d1, Uniform Delay [s]	22.79	23.68	31.32	26.74	12.91	32.45	0.52
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.51	8.38	1.39	0.25	0.12	2.56	3.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

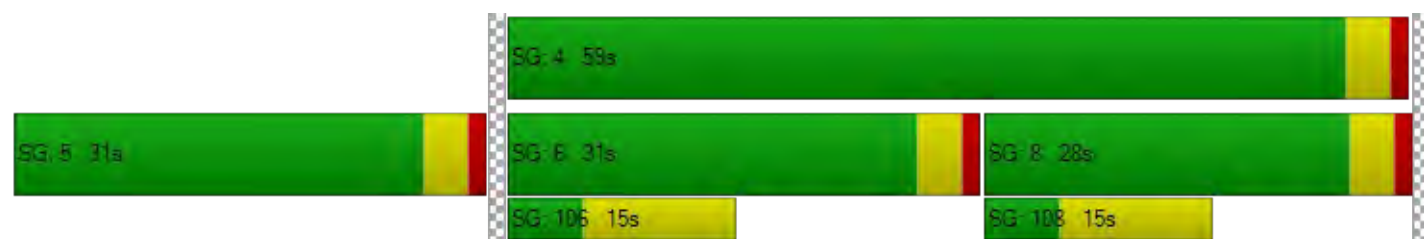
X, volume / capacity	0.69	0.76	0.76	0.21	0.37	0.74	0.72
d, Delay for Lane Group [s/veh]	28.30	32.06	32.71	26.99	13.03	35.01	3.67
Lane Group LOS	C	C	C	C	B	D	A
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.15	9.79	6.78	1.38	3.89	6.41	1.26
50th-Percentile Queue Length [ft]	228.77	244.77	169.59	34.62	97.31	160.31	31.60
95th-Percentile Queue Length [veh]	14.11	14.92	11.05	2.49	7.01	10.57	2.27
95th-Percentile Queue Length [ft]	352.79	373.06	276.37	62.31	175.16	264.14	56.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.59	0.00	32.06	32.71	0.00	26.99	0.00	0.00	13.03	0.00	35.01	3.67
Movement LOS	C		C	C		C			B		D	A
d_A, Approach Delay [s/veh]	30.17			32.09			13.03			10.84		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.46											
Intersection LOS	C											
Intersection V/C	0.491											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	42.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	550	44	144	51	79	42	306	997	85	107	646	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	550	44	144	51	79	42	306	997	85	107	646	776
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	11	36	13	20	11	77	249	21	27	162	194
Total Analysis Volume [veh/h]	550	44	144	51	79	42	306	997	85	107	646	776
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	47	0	9	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	46	46	7	43	43
g / C, Green / Cycle	0.17	0.17	0.17	0.06	0.06	0.06	0.64	0.51	0.51	0.08	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.17	0.17	0.09	0.03	0.04	0.03	0.45	0.28	0.05	0.06	0.35	0.49
s, saturation flow rate [veh/h]	1774	1787	1583	1774	1863	1583	674	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	111	116	99	369	1826	815	139	893	759
d1, Uniform Delay [s]	37.51	37.51	34.38	40.74	41.32	40.64	27.31	14.74	11.20	40.70	18.67	23.43
k, delay calibration	0.41	0.41	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	47.75	47.05	1.75	2.96	6.76	2.87	19.11	1.18	0.26	8.68	5.06	38.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	1.00	0.55	0.46	0.68	0.42	0.83	0.55	0.10	0.77	0.72	1.02
d, Delay for Lane Group [s/veh]	85.26	84.56	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Lane Group LOS	F	F	D	D	D	D	D	B	B	D	C	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	10.29	10.31	2.97	1.17	1.91	0.97	4.24	6.71	0.89	2.63	11.29	22.90
50th-Percentile Queue Length [ft]	257.34	257.69	74.30	29.26	47.86	24.15	106.01	167.70	22.21	65.77	282.35	572.50
95th-Percentile Queue Length [veh]	15.57	15.57	5.35	2.11	3.45	1.74	7.62	10.96	1.60	4.74	16.81	31.28
95th-Percentile Queue Length [ft]	389.20	389.32	133.75	52.68	86.15	43.47	190.44	273.89	39.98	118.39	420.14	781.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	84.94	84.56	36.14	43.69	48.08	43.52	46.42	15.92	11.45	49.38	23.74	61.84
Movement LOS	F	F	D	D	D	D	D	B	B	D	C	F
d_A, Approach Delay [s/veh]	75.39			45.66			22.37			44.87		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	42.63											
Intersection LOS	D											
Intersection V/C	0.786											

Sequence



Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	798	152	92	139	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	798	152	92	139	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	200	38	23	35	0	0
Total Analysis Volume [veh/h]	798	152	92	139	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.13	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.74	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.44	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	10.95	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.28		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	102.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1158	0	0	310	131	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1158	0	0	310	131	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	290	0	0	78	33	26
Total Analysis Volume [veh/h]	1158	0	0	310	131	102
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.87	0.22
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	101.96	15.09
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	5.93	0.84
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	148.22	21.07
d_A, Approach Delay [s/veh]	0.00		0.00		63.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	8.76					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	207.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.091

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	212	4	3	107	0	72	4	89	0	0	0
Total Analysis Volume [veh/h]	0	846	16	12	426	0	288	14	354	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.00	0.00	1.20	0.09	0.45	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.71	0.00	0.00	199.46	207.84	13.16	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	B			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	1.16	0.58	0.00	15.68	9.00	2.33	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	29.01	14.51	0.00	391.94	225.04	58.13	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.27			99.11			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	33.30											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	52.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.406

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	92	865	626	147	47	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	865	626	147	47	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	216	157	37	12	13
Total Analysis Volume [veh/h]	92	865	626	147	47	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.01	0.00	0.41	0.09
d_M, Delay for Movement [s/veh]	9.82	0.00	0.00	0.00	52.14	26.94
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh]	3.69	1.84	0.00	0.00	2.45	2.45
95th-Percentile Queue Length [ft]	92.23	46.12	0.00	0.00	61.14	61.14
d_A, Approach Delay [s/veh]	0.94		0.00		38.79	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.61					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**




Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:

11.0
B

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	118	0	741	3	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	0	741	3	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	0	185	1	0	7
Total Analysis Volume [veh/h]	118	0	741	3	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.47	2.65	2.64	0.09
95th-Percentile Queue Length [ft]	11.87	66.25	66.11	2.16
Approach Delay [s/veh]	7.85	11.61		6.70
Approach LOS	A	B		A
Intersection Delay [s/veh]	10.96			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 7.8
 Level Of Service: A

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	20	8	1	9	0	4	0	0	0	0
Total Analysis Volume [veh/h]	10	0	78	30	2	34	0	16	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.24	0.20	
95th-Percentile Queue Length [ft]	6.58	5.95	4.92	
Approach Delay [s/veh]	7.81		7.55	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	7.79			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	83	0	2	34	0	15	10	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	2	34	0	15	10	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	1	9	0	4	3	20
Total Analysis Volume [veh/h]	83	0	2	34	0	15	10	78
Pedestrian Volume [ped/h]	0				0			

Intersection Settings

Lanes



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.49	0.12	0.31
95th-Percentile Queue Length [ft]	12.32	2.88	7.73
Approach Delay [s/veh]	8.00	7.65	
Approach LOS	A	A	
Intersection Delay [s/veh]	7.79		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	509.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.572

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2290	676	62	2080
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2290	676	62	2080
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	573	169	16	520
Total Analysis Volume [veh/h]	0	0	2290	676	62	2080
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.57	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	509.65	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	6.43	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	160.83	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.75	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	6.19					
Intersection LOS	F					

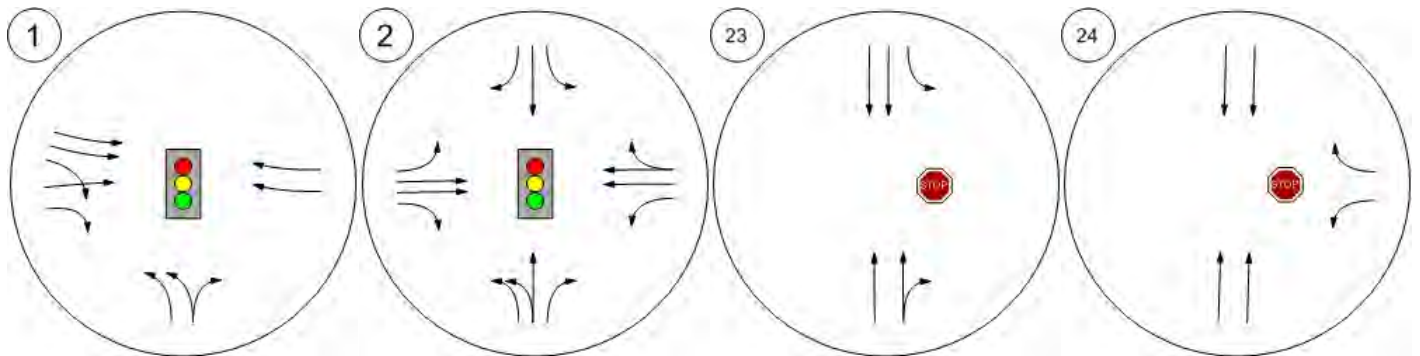
Study Intersections



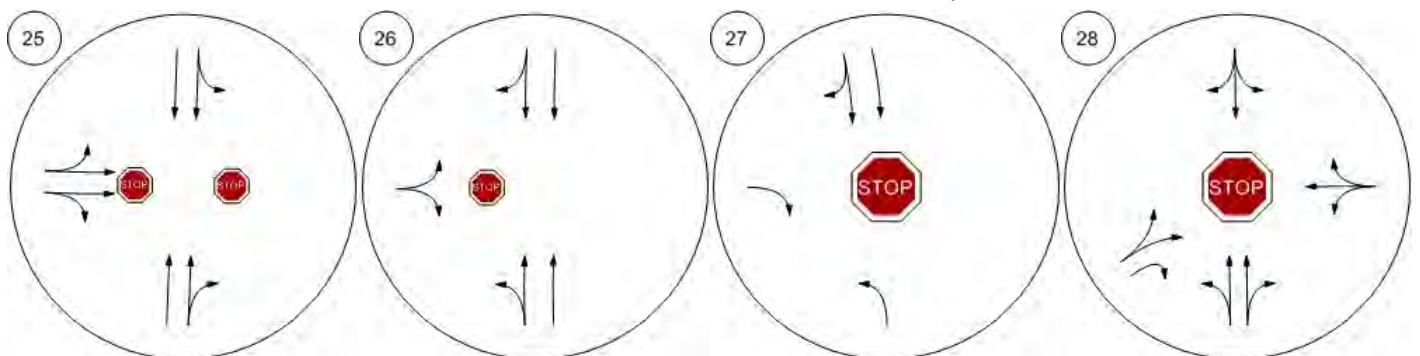
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ramp



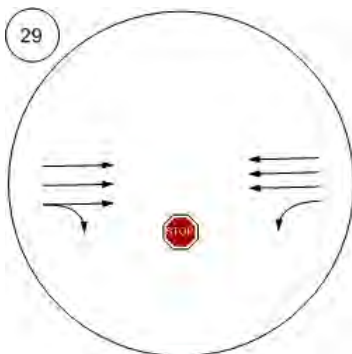
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



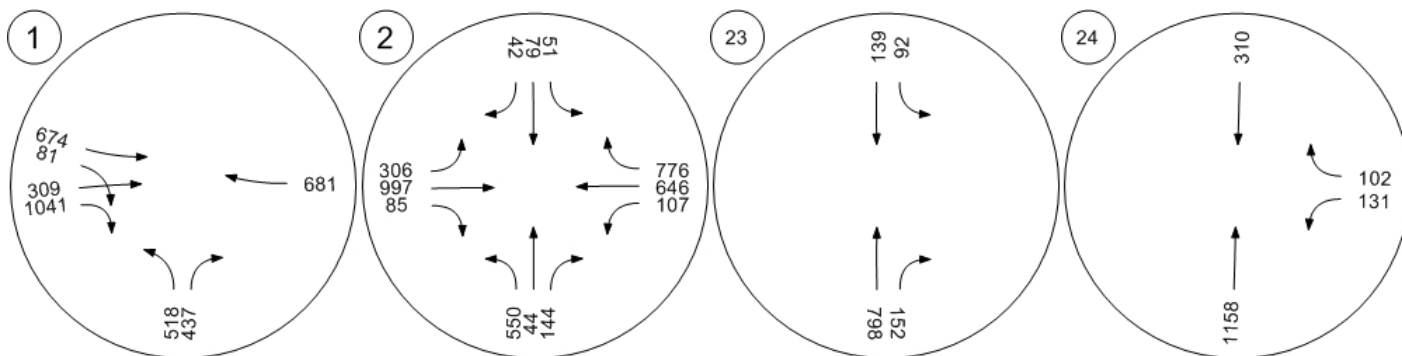
US 101 SB On-ramp & Suns



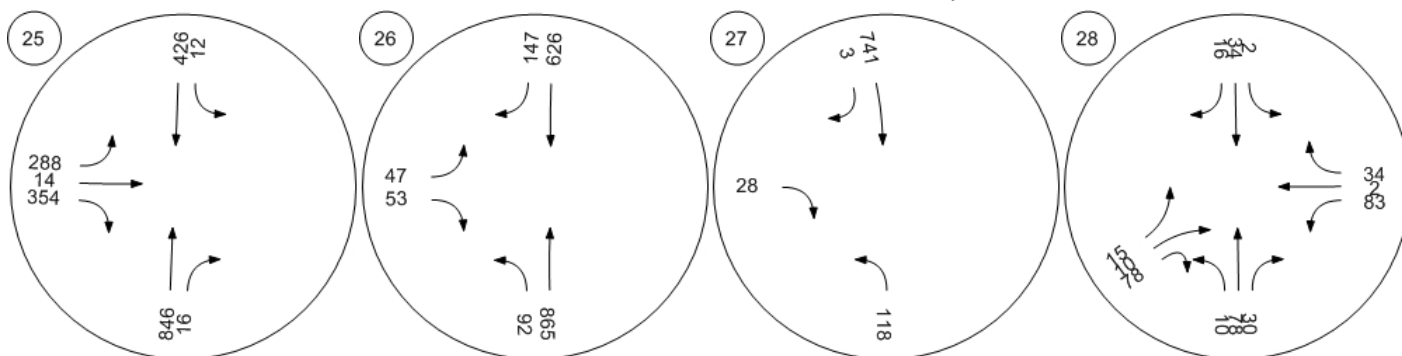
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



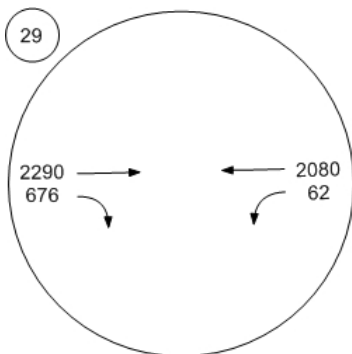
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



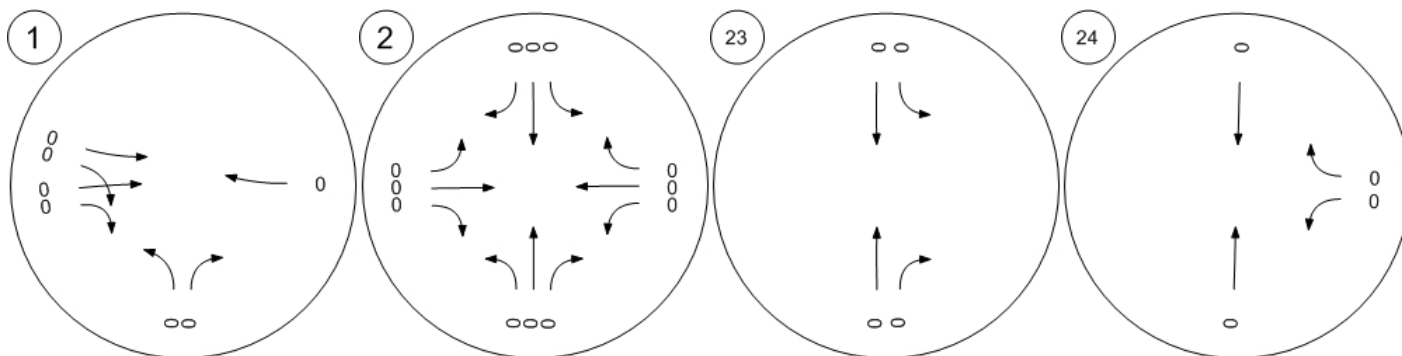
US 101 SB On-ramp & Suns



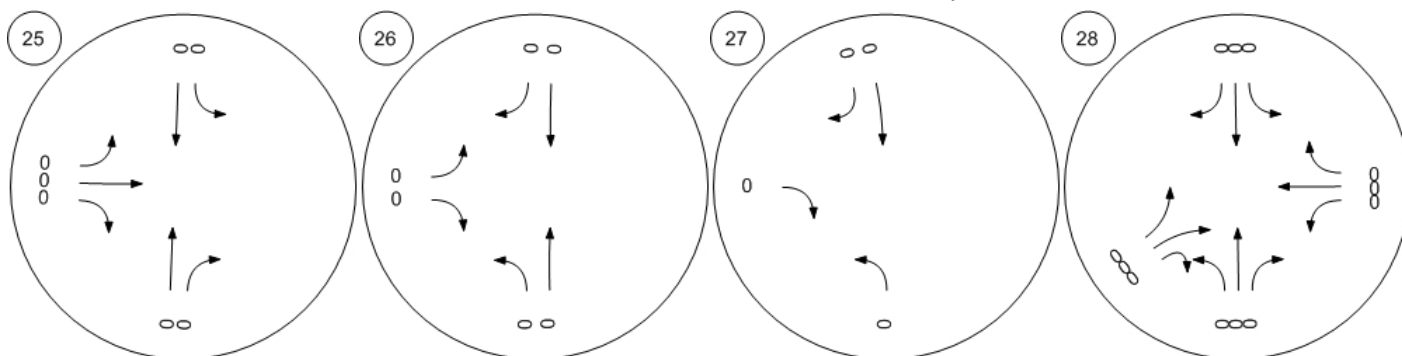
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



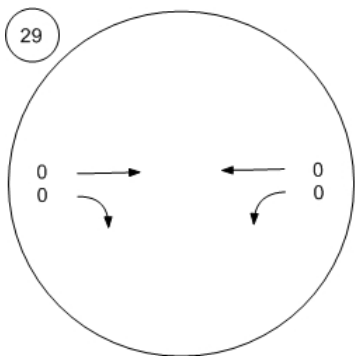
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



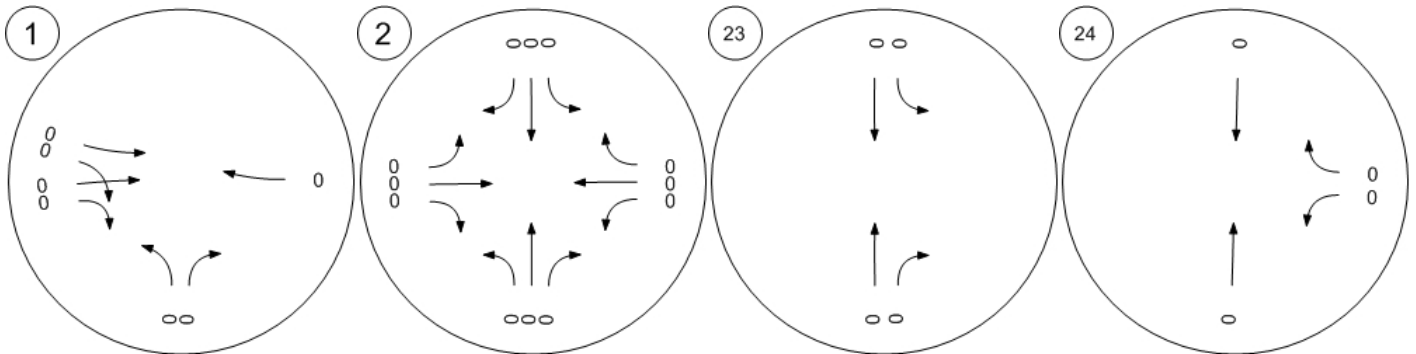
US 101 SB On-ramp & Suns



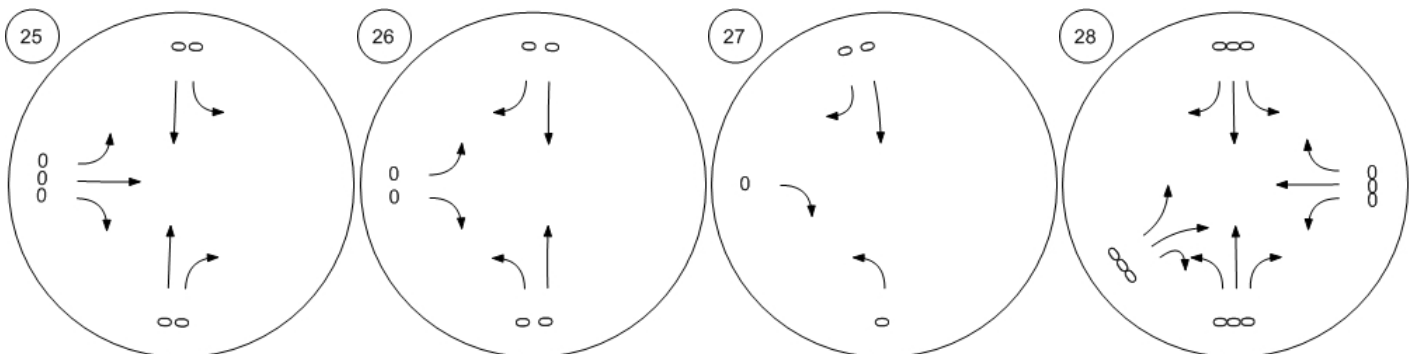
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



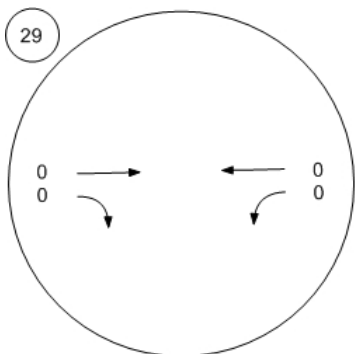
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



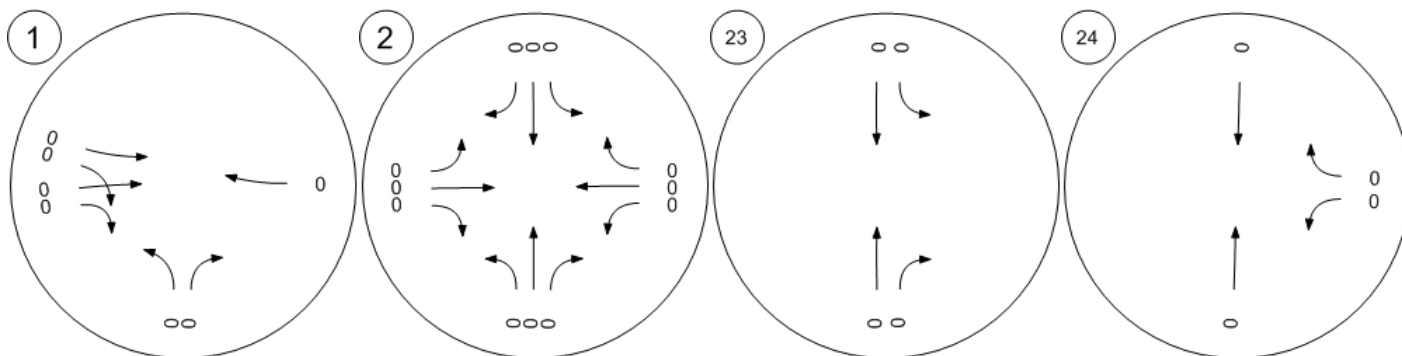
US 101 SB On-ramp & Suns



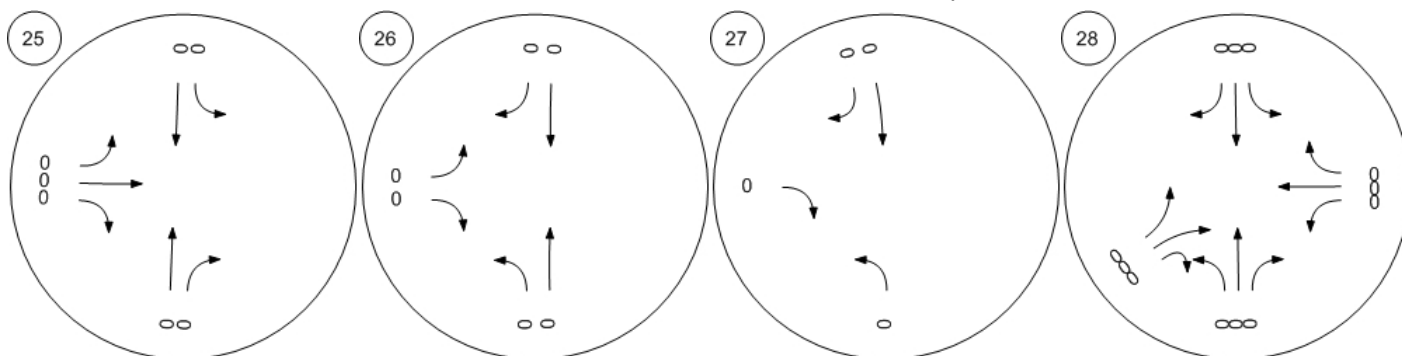
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



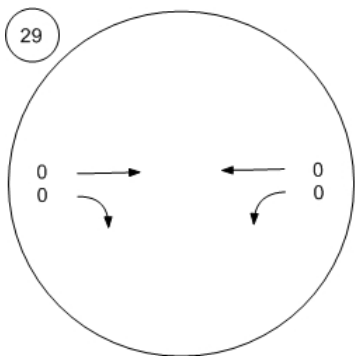
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



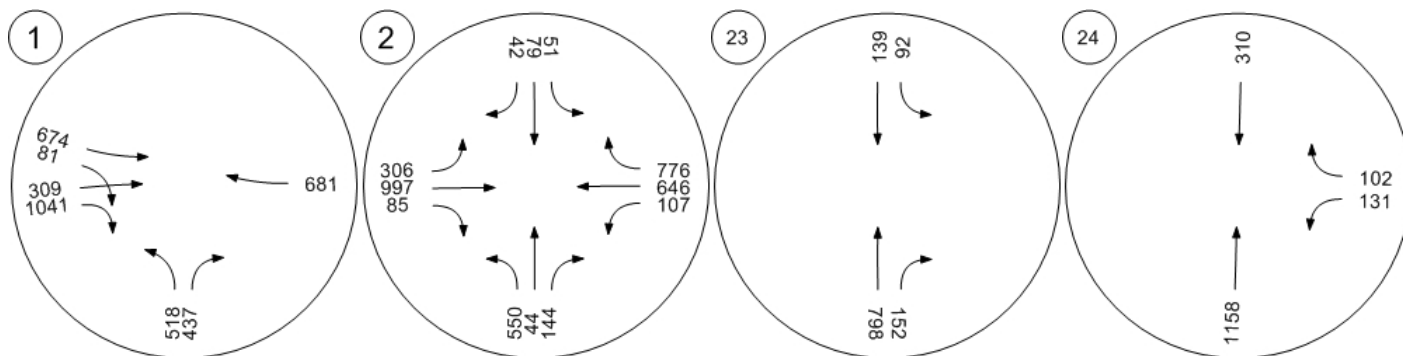
US 101 SB On-ramp & Suns



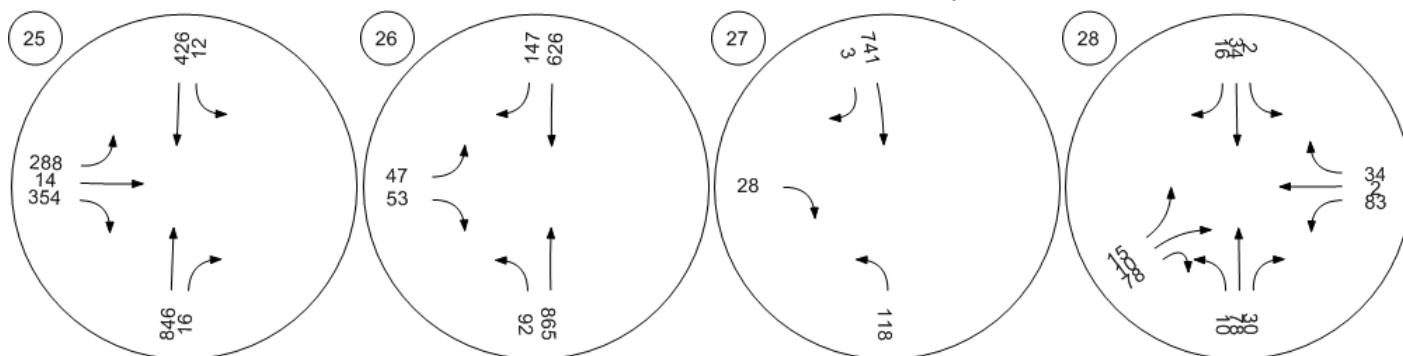
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



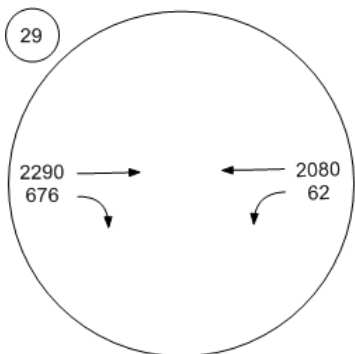
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



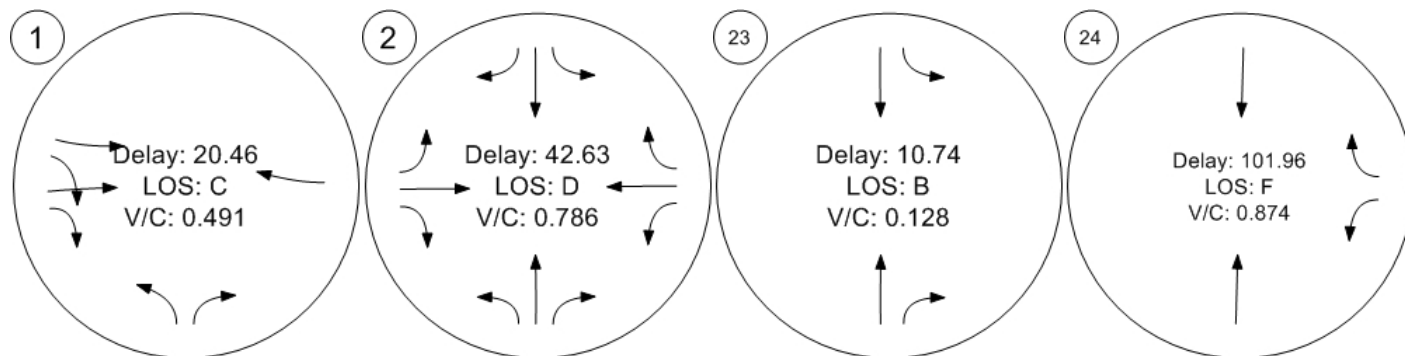
US 101 SB On-ramp & Suns



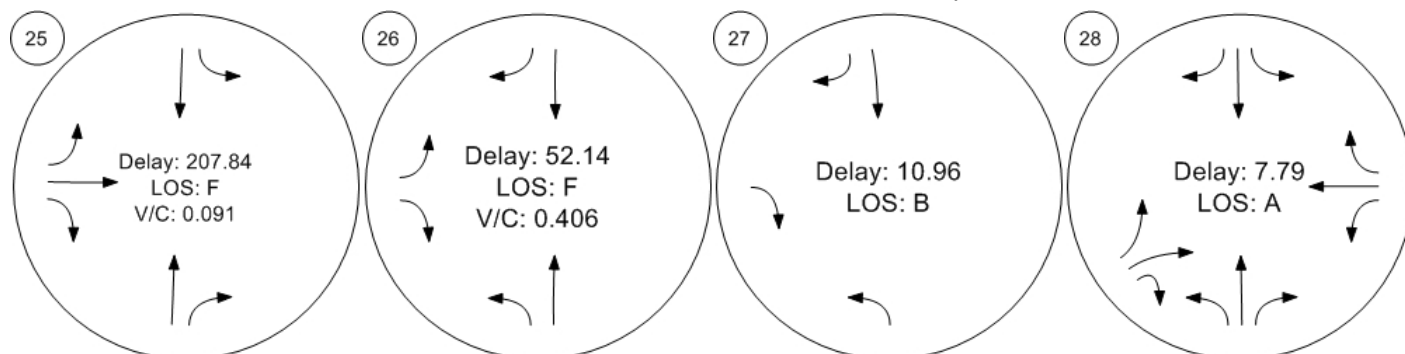
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

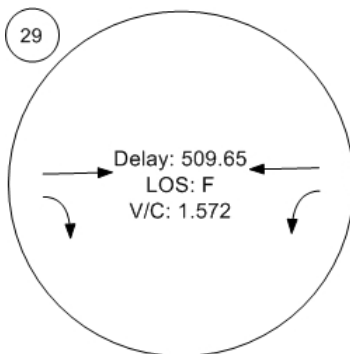


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 17 Supermarket - FP 2035 AM

Report File: S:\...\Supermarket - FP2035AM.pdf

3/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NEB Right	0.707	89.6	F
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	WB Right	1.166	86.3	F
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.137	9.7	A
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	1.397	240.5	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.219	474.4	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.246	38.4	E
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru	0.741	18.2	C
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	SB Thru	0.768	18.6	C
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	1.807	563.5	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	89.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	162	0	374	613	0	87	0	0	1153	0	155	1937
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	0	374	613	0	87	0	0	1153	0	155	1937
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	0	94	153	0	22	0	0	288	0	39	484
Total Analysis Volume [veh/h]	162	0	374	613	0	87	0	0	1153	0	155	1937
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	52	0	0	19	0	19	0	0	38	0	19	52
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
Rest In Walk	No			No					No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	15	34	15	82
g / C, Green / Cycle	0.53	0.53	0.17	0.17	0.38	0.17	0.91
(v / s)_i Volume / Saturation Flow Rate	0.09	0.24	0.17	0.05	0.33	0.08	1.22
s, saturation flow rate [veh/h]	1774	1583	3547	1583	3547	1863	1583
c, Capacity [veh/h]	948	846	592	264	1336	308	1443
d1, Uniform Delay [s]	10.73	12.77	37.50	33.06	25.92	34.20	3.27
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	1.67	27.44	0.72	1.79	1.27	158.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.44	1.04	0.33	0.86	0.50	1.34
d, Delay for Lane Group [s/veh]	11.12	14.44	64.94	33.78	27.71	35.47	162.23
Lane Group LOS	B	B	F	C	C	D	F
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.67	4.69	8.63	1.71	11.17	3.15	63.70
50th-Percentile Queue Length [ft]	41.64	117.14	215.67	42.63	279.27	78.67	1592.48
95th-Percentile Queue Length [veh]	3.00	8.24	13.67	3.07	16.65	5.66	97.49
95th-Percentile Queue Length [ft]	74.96	205.89	341.73	76.74	416.31	141.61	2437.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.12	0.00	14.44	64.94	0.00	33.78	0.00	0.00	27.71	0.00	35.47	162.23
Movement LOS	B		B	F		C			C		D	F
d_A, Approach Delay [s/veh]	13.44			61.07			27.71			152.84		
Approach LOS	B			E			C			F		
d_I, Intersection Delay [s/veh]	89.63											
Intersection LOS	F											
Intersection V/C	0.707											

Sequence



Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	86.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.166

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	428	28	43	86	143	79	381	574	139	165	1113	862
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	428	28	43	86	143	79	381	574	139	165	1113	862
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	7	11	22	36	20	95	144	35	41	278	216
Total Analysis Volume [veh/h]	428	28	43	86	143	79	381	574	139	165	1113	862
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	9	19	0	37	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	9	9	9	55	41	41	10	43	43
g / C, Green / Cycle	0.15	0.15	0.15	0.10	0.10	0.10	0.62	0.46	0.46	0.12	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.03	0.05	0.08	0.05	0.75	0.16	0.09	0.09	0.53	0.61
s, saturation flow rate [veh/h]	1774	1784	1583	1774	1863	1583	509	3547	1583	1774	1863	1614
c, Capacity [veh/h]	267	268	238	178	186	158	327	1618	722	205	893	774
d1, Uniform Delay [s]	37.26	37.26	33.40	38.31	39.48	38.37	35.66	15.88	14.59	38.83	23.44	23.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.53	7.49	0.36	2.04	6.47	2.41	102.12	0.61	0.59	7.26	63.54	134.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

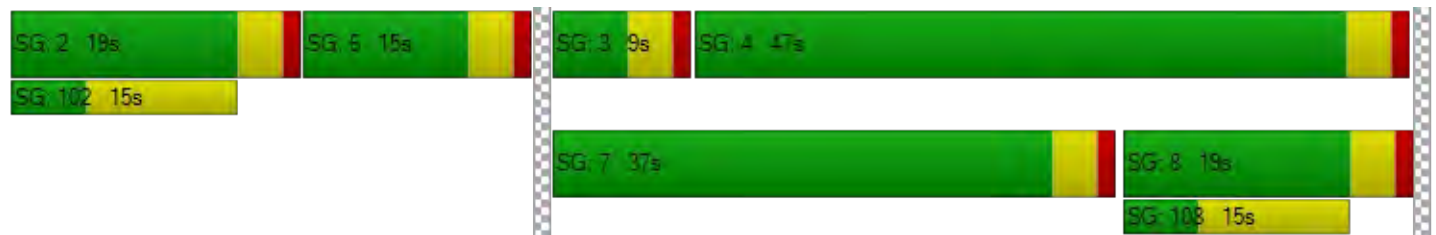
X, volume / capacity	0.85	0.85	0.18	0.48	0.77	0.50	1.16	0.35	0.19	0.81	1.11	1.28
d, Delay for Lane Group [s/veh]	44.80	44.76	33.75	40.35	45.95	40.78	137.78	16.49	15.18	46.09	86.98	157.81
Lane Group LOS	D	D	C	D	D	D	F	B	B	D	F	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	5.35	5.37	0.84	1.87	3.37	1.74	11.98	3.80	1.75	3.91	33.16	43.96
50th-Percentile Queue Length [ft]	133.64	134.35	20.88	46.84	84.33	43.43	299.40	95.08	43.76	97.81	829.05	1098.90
95th-Percentile Queue Length [veh]	9.14	9.18	1.50	3.37	6.07	3.13	19.58	6.85	3.15	7.04	45.97	64.72
95th-Percentile Queue Length [ft]	228.44	229.40	37.59	84.31	151.80	78.18	489.56	171.14	78.76	176.06	1149.15	1618.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.78	44.76	33.75	40.35	45.95	40.78	137.78	16.49	15.18	46.09	94.97	157.81
Movement LOS	D	D	C	D	D	D	F	B	B	D	F	F
d_A, Approach Delay [s/veh]	43.83			43.06			58.56			116.51		
Approach LOS	D			D			E			F		
d_I, Intersection Delay [s/veh]	86.25											
Intersection LOS	F											
Intersection V/C	1.166											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-




Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	526	170	123	249	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	526	170	123	249	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	132	43	31	62	0	0
Total Analysis Volume [veh/h]	526	170	123	249	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.14	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.66	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.48	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	11.88	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.19		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	240.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.397

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	728	0	0	520	341	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	728	0	0	520	341	132
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	182	0	0	130	85	33
Total Analysis Volume [veh/h]	728	0	0	520	341	132
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	1.40	0.21
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	240.47	12.18
Movement LOS	A			A	F	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	18.89	0.78
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	472.17	19.52
d_A, Approach Delay [s/veh]	0.00		0.00		176.76	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	48.58					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	474.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.219

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	487	35	29	829	0	256	29	790	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	487	35	29	829	0	256	29	790	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	122	9	7	207	0	64	7	198	0	0	0
Total Analysis Volume [veh/h]	0	487	35	29	829	0	256	29	790	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.01	0.00	1.66	0.22	1.35	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.56	0.00	0.00	470.63	474.42	187.96	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	2.05	1.02	0.00	21.63	27.86	34.09	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	51.24	25.62	0.00	540.81	696.52	852.22	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.29			263.01			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	115.27											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type:	Two-way stop	Delay (sec / veh):	38.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.246

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	38	503	356	1182	35	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	503	356	1182	35	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	126	89	296	9	3
Total Analysis Volume [veh/h]	38	503	356	1182	35	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.01	0.00	0.01	0.25	0.03
d_M, Delay for Movement [s/veh]	14.23	0.00	0.00	0.00	38.45	23.65
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh]	4.24	2.12	0.00	0.00	1.09	1.09
95th-Percentile Queue Length [ft]	105.91	52.96	0.00	0.00	27.28	27.28
d_A, Approach Delay [s/veh]	1.00		0.00		34.67	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.02					
Intersection LOS	E					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**

Control Type:	All-way stop	Delay (sec / veh):	18.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.741

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	43	0	1107	49	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	1107	49	0	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	277	12	0	7
Total Analysis Volume [veh/h]	43	0	1107	49	0	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	860	781	791	1049
Degree of Utilization, x	0.05	0.74	0.73	0.03



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	6.76	6.55	0.08
95th-Percentile Queue Length [ft]	3.94	169.09	163.69	2.05
Approach Delay [s/veh]	7.41	18.93		6.52
Approach LOS	A	C		A
Intersection Delay [s/veh]	18.24			
Intersection LOS	C			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type:	All-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

Volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	98	10	3	117	0	2	0	0	0	0
Total Analysis Volume [veh/h]	16	0	391	38	12	466	0	7	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	573	587	631	
Degree of Utilization, x	0.39	0.38	0.77	

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.83	1.76	7.15	
95th-Percentile Queue Length [ft]	45.76	44.04	178.66	
Approach Delay [s/veh]	12.72		25.03	0.00
Approach LOS	B		D	A
Intersection Delay [s/veh]	18.57			
Intersection LOS	C			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

Volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	207	0	6	84	0	72	26	325
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	0	6	84	0	72	26	325
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	0	2	21	0	18	7	81
Total Analysis Volume [veh/h]	207	0	6	84	0	72	26	325
Pedestrian Volume [ped/h]	0				0			

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	577	443	511
Degree of Utilization, x	0.51	0.22	0.64



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.93	0.84	4.40
95th-Percentile Queue Length [ft]	73.37	20.93	110.00
Approach Delay [s/veh]	15.66	19.34	
Approach LOS	C	C	
Intersection Delay [s/veh]	18.57		
Intersection LOS	C		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	563.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.807

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2009	774	89	3351
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2009	774	89	3351
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	502	194	22	838
Total Analysis Volume [veh/h]	0	0	2009	774	89	3351
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	1.81	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	563.54	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	8.77	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	219.31	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		14.58	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	8.06					
Intersection LOS	F					

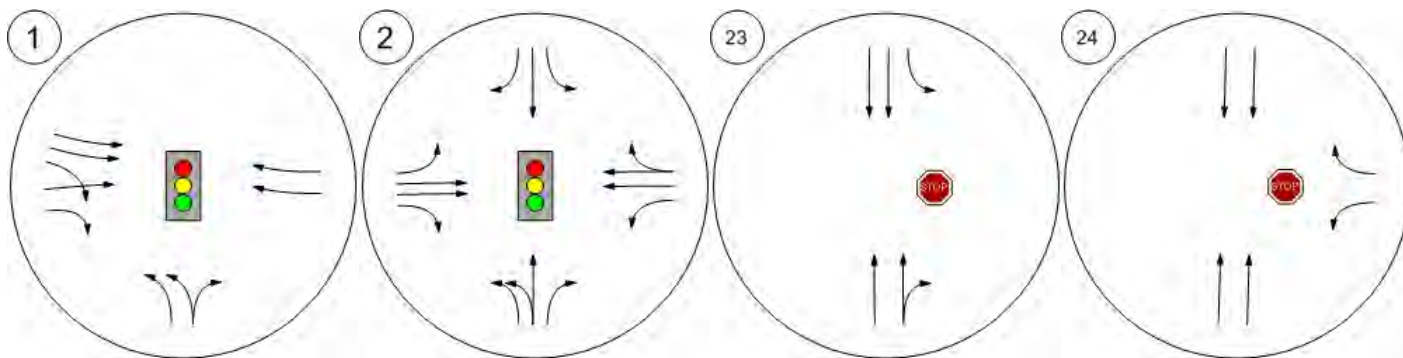
Study Intersections



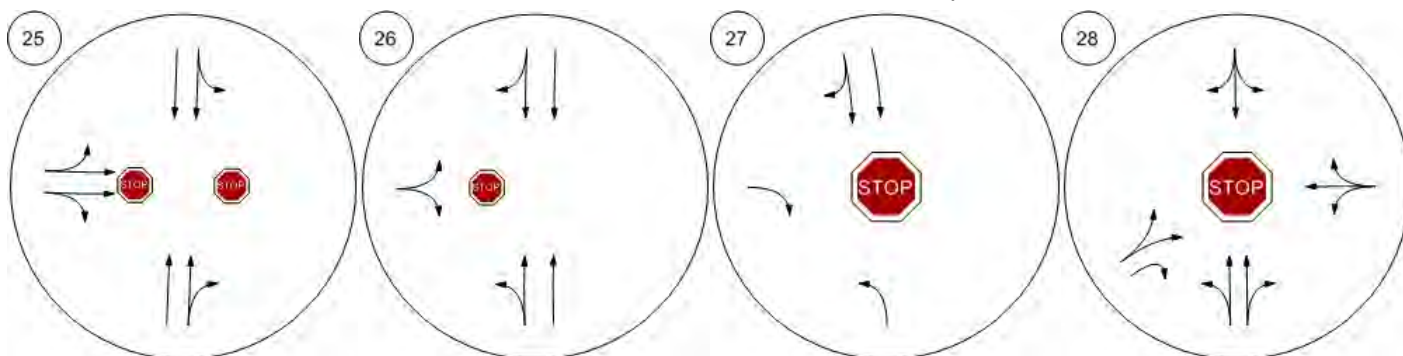
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



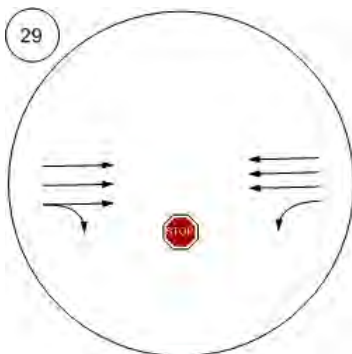
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



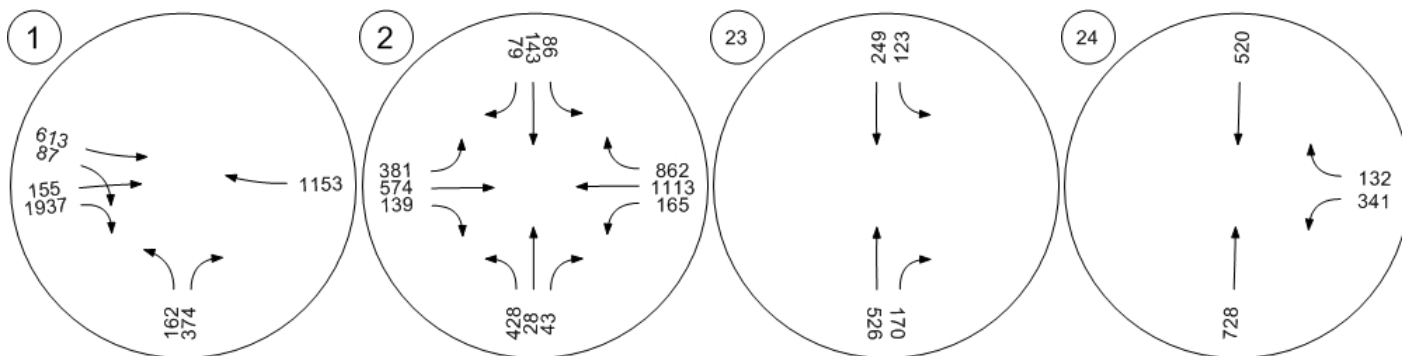
US 101 SB On-ramp & Suns



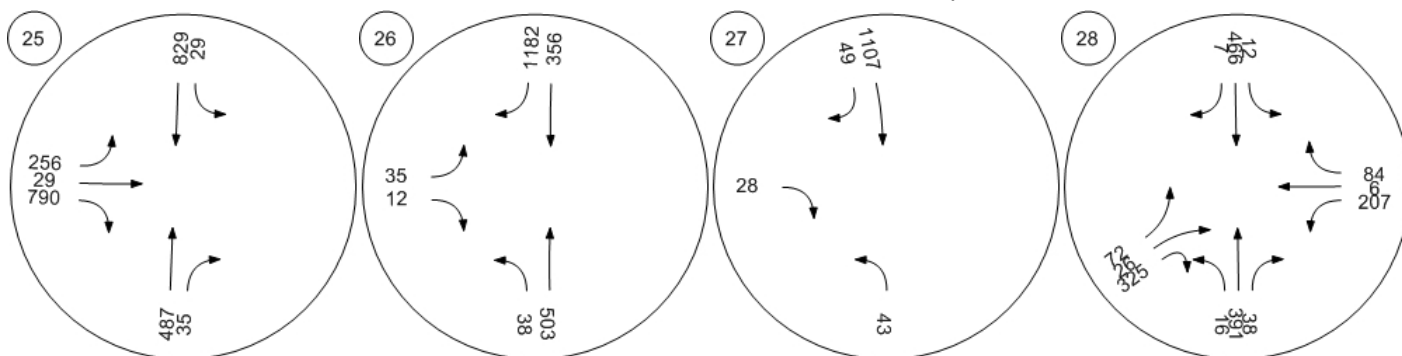
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



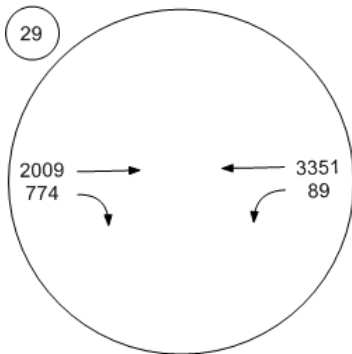
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



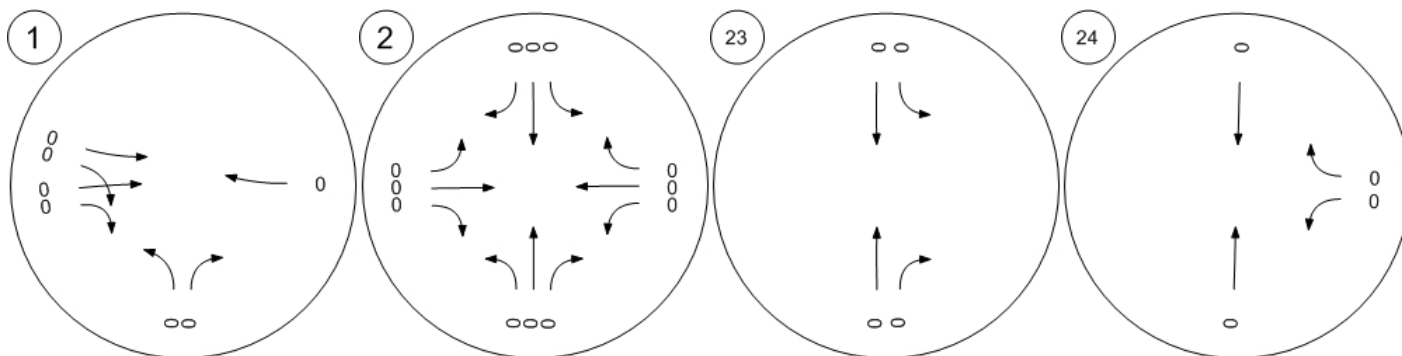
US 101 SB On-ramp & Suns



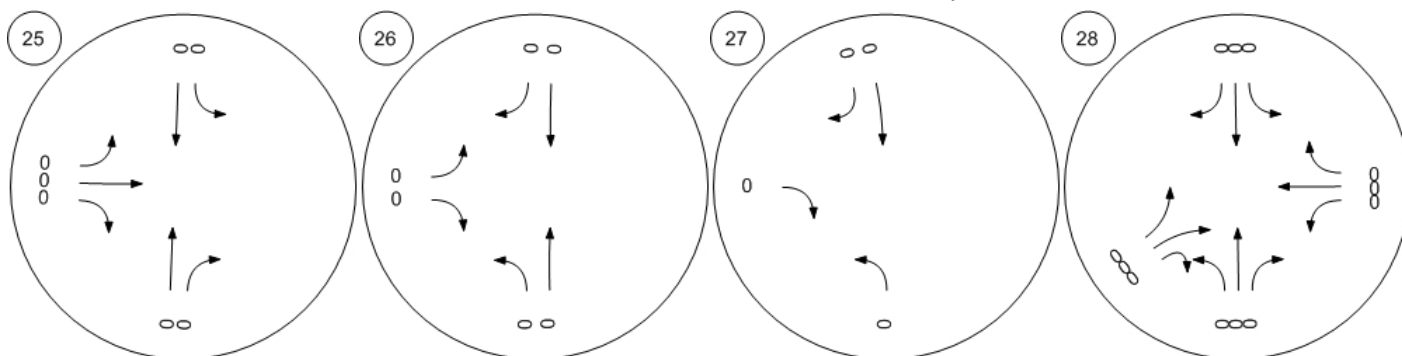
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



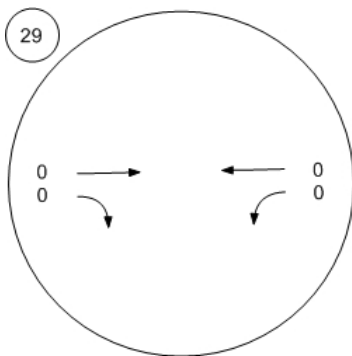
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



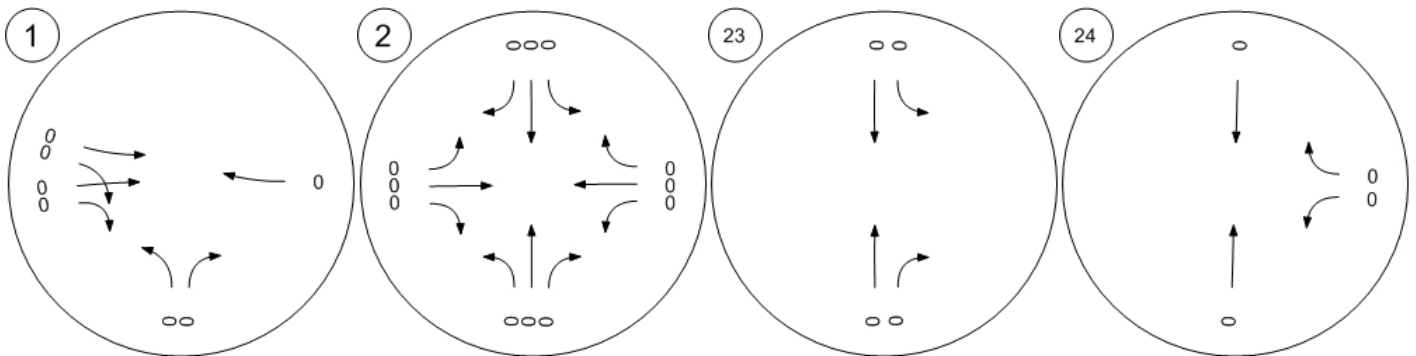
US 101 SB On-ramp & Suns



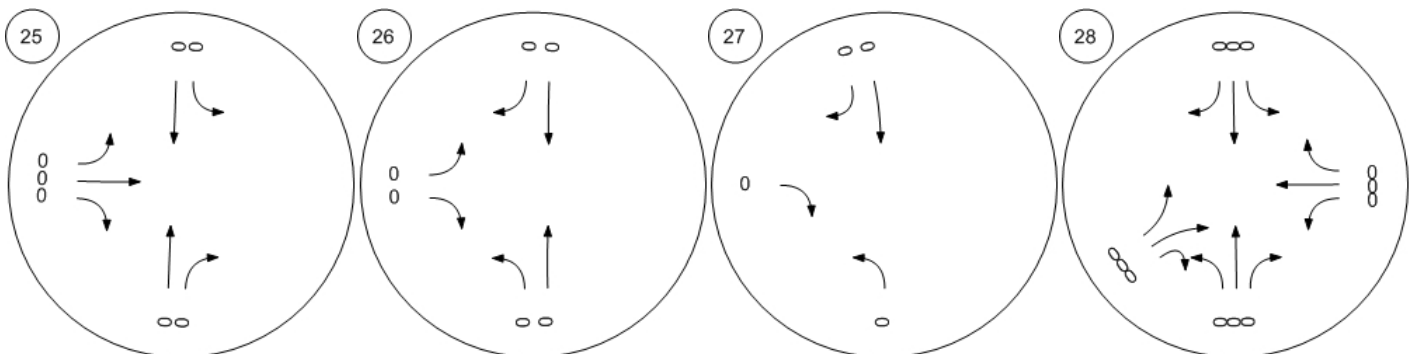
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



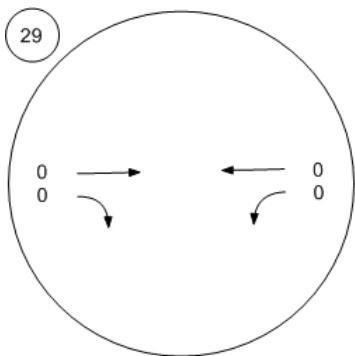
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



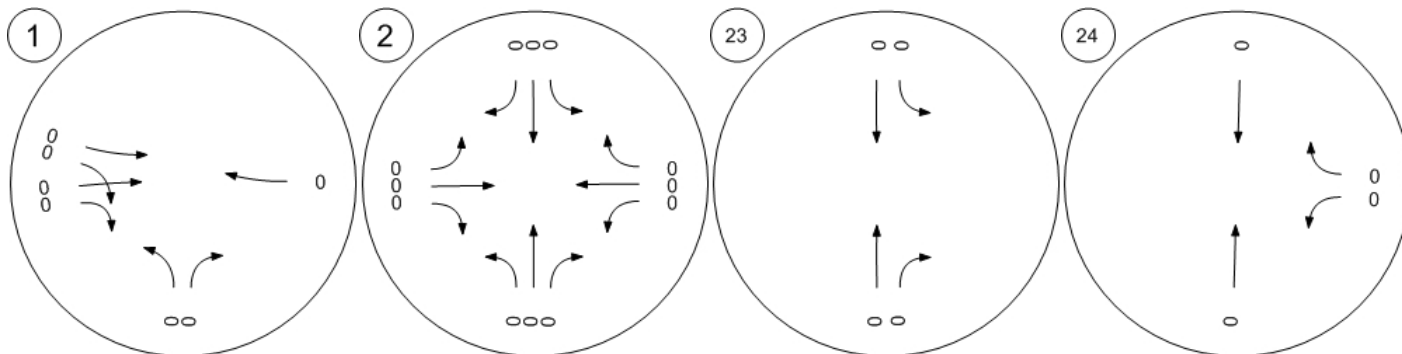
US 101 SB On-ramp & Suns



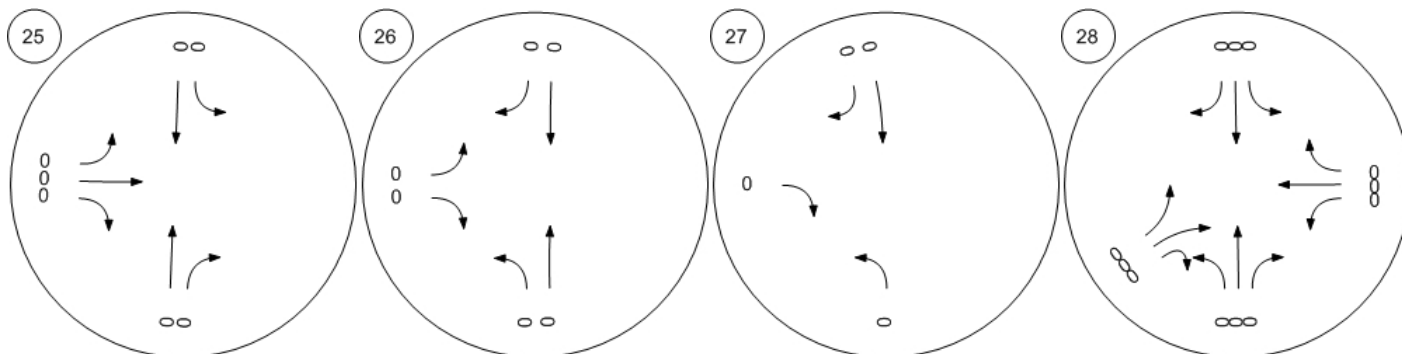
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



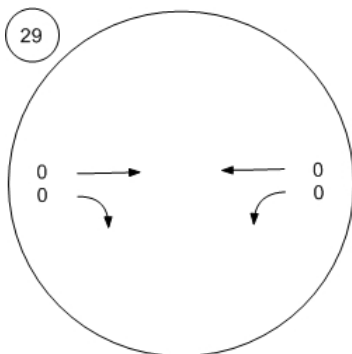
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



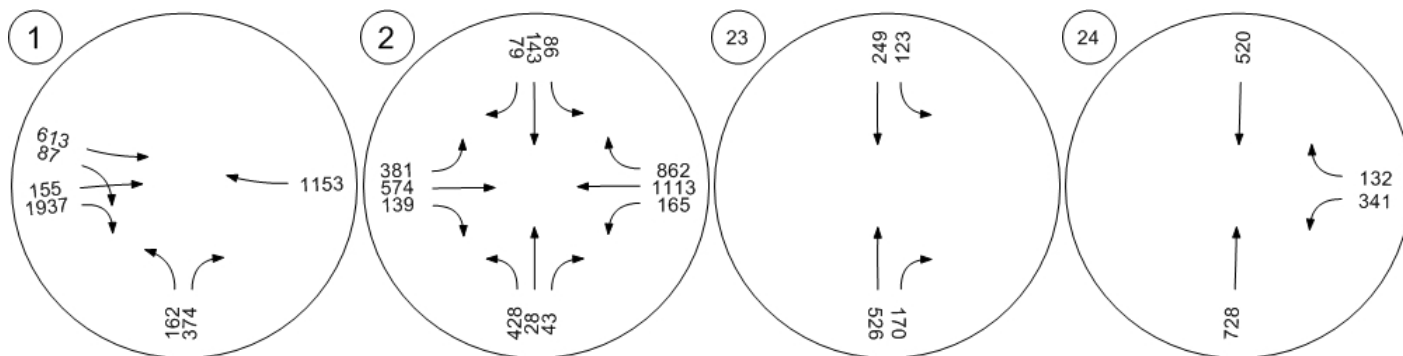
US 101 SB On-ramp & Suns



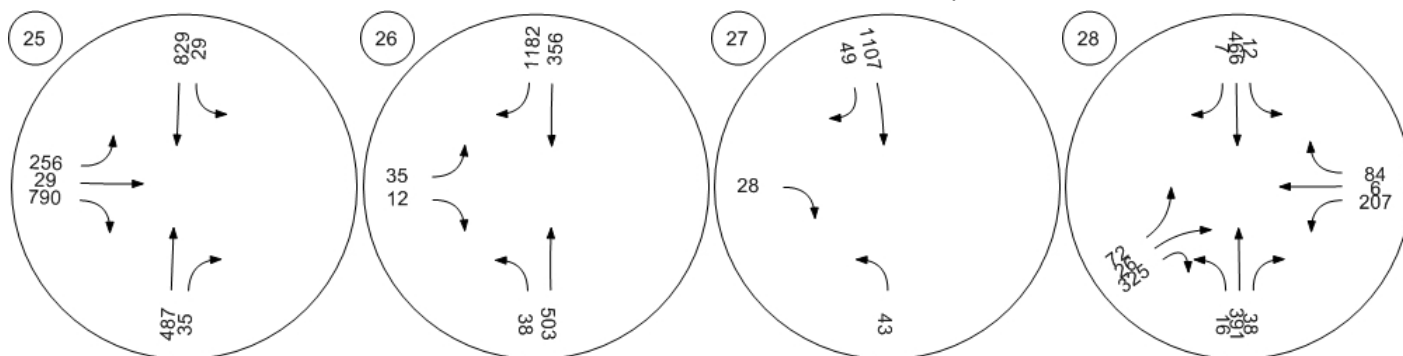
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



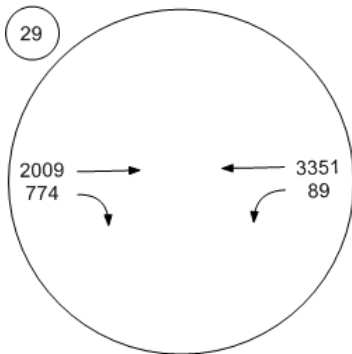
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Future Total Volume



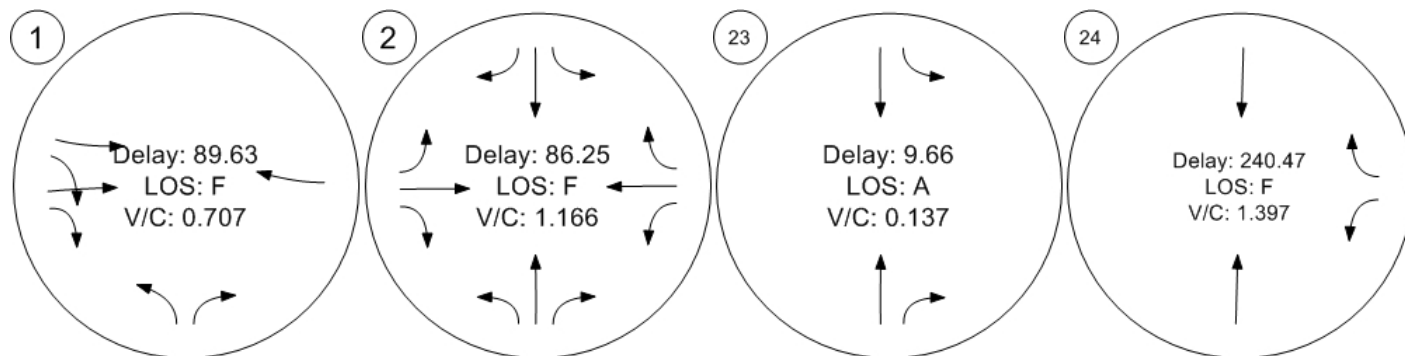
US 101 SB On-ramp & Suns



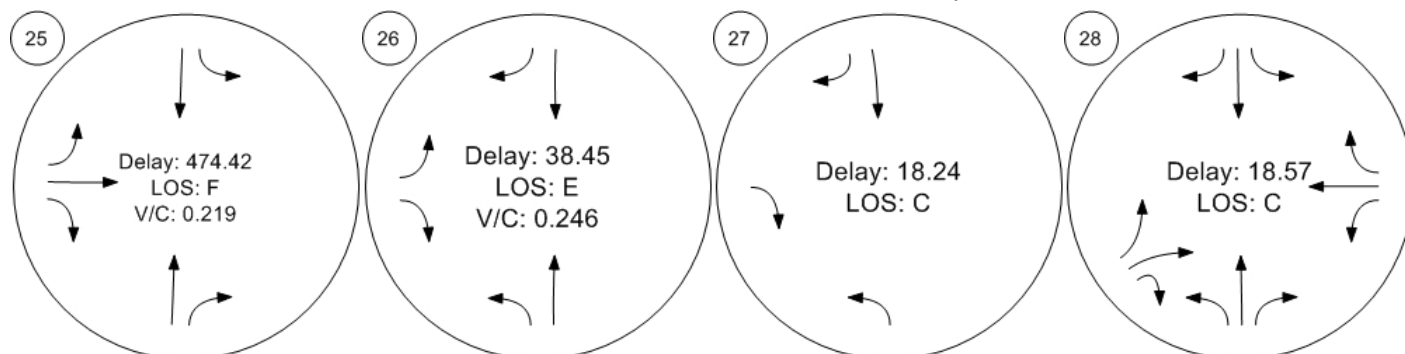
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns

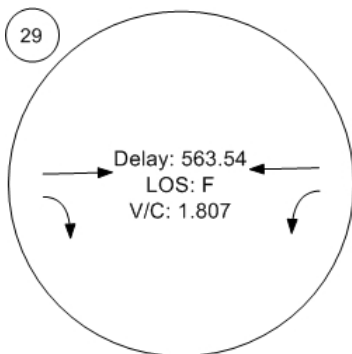


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J1522 Modera Argyle

Vistro File: S:\...\J1522 Vistro - Caltrans.vistro

Scenario 18 Supermarket - FP 2035 PM

Report File: S:\...\Supermarket - FP2035PM.pdf

3/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Vine & US 101 SB Off-ramp / Franklin	Signalized	HCM 2010	NB Right	0.649	42.0	D
2	Argyle & Franklin / US 101 NB On-ramp	Signalized	HCM 2010	NB Left	1.165	93.9	F
23	Argyle & US 101 SB On-ramp	Two-way stop	HCM 2010	SB Left	0.212	13.1	B
24	Gower & US 101 NB Off-ramp	Two-way stop	HCM 2010	WB Left	2.326	693.0	F
25	Gower & US 101 SB Off-ramp	Two-way stop	HCM 2010	EB Thru	0.169	635.7	F
26	Gower Street & Yucca Street	Two-way stop	HCM 2010	EB Left	0.634	88.1	F
27	US 101 SB Off-Ramp/Van Ness Ave & Harold Way	All-way stop	HCM 2010	SB Thru	0.569	12.5	B
28	Wilton Pl & US 101 NB Off-Ramp/Harold Way	All-way stop	HCM 2010	NEB Left	0.163	8.1	A
29	US 101 SB On-ramp & Sunset	Two-way stop	HCM 2010	WB Left	8.629	4,101.9	F





V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Vine & US 101 SB Off-ramp / Franklin

Control Type:	Signalized	Delay (sec / veh):	42.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

Intersection Setup

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Approach	Northbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Left	Right	Thru	Right	Right	Left	Thru	Thru	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Vine St			Franklin Ave			Franklin Ave			US 101 SB Off-ramp		
Base Volume Input [veh/h]	611	0	561	896	0	115	0	0	827	0	348	1319
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	0	561	896	0	115	0	0	827	0	348	1319
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	0	140	224	0	29	0	0	207	0	87	330
Total Analysis Volume [veh/h]	611	0	561	896	0	115	0	0	827	0	348	1319
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal group	5	0	0	6	0	6	0	0	4	0	8	5
Auxiliary Signal Groups												5,6,8
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	0	0	5	0	5	0	0	5	0	5	5
Maximum Green [s]	30	0	0	30	0	30	0	0	30	0	30	30
Amber [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	0	31	0	31	0	0	59	0	28	31
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	0	5	0	0	5	0	5	5
Pedestrian Clearance [s]	10	0	0	10	0	10	0	0	10	0	10	10
Rest In Walk	No			No					No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No			No		No			No		No	No
Maximum Recall	No			No		No			No		No	No
Pedestrian Recall	No			No		No			No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	26	26	54	24	82
g / C, Green / Cycle	0.31	0.31	0.29	0.29	0.60	0.26	0.91
(v / s)_i Volume / Saturation Flow Rate	0.33	0.37	0.25	0.07	0.23	0.19	0.83
s, saturation flow rate [veh/h]	1774	1591	3547	1583	3547	1863	1583
c, Capacity [veh/h]	550	493	1037	463	2132	492	1443
d1, Uniform Delay [s]	31.06	31.06	30.16	24.31	9.34	29.97	1.06
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.13	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	56.97	103.56	2.30	0.28	0.12	2.22	10.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

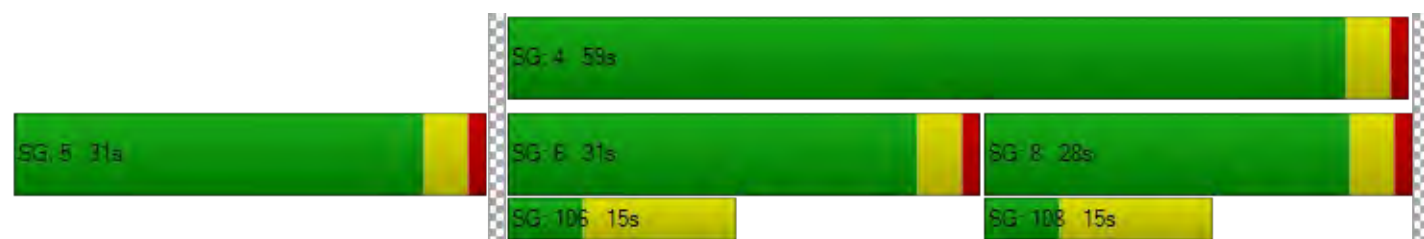
X, volume / capacity	1.07	1.19	0.86	0.25	0.39	0.71	0.91
d, Delay for Lane Group [s/veh]	88.03	134.62	32.46	24.59	9.46	32.19	11.53
Lane Group LOS	F	F	C	C	A	C	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	20.17	24.46	9.21	1.87	3.85	6.94	4.19
50th-Percentile Queue Length [ft]	504.17	611.59	230.25	46.81	96.32	173.46	104.87
95th-Percentile Queue Length [veh]	28.67	36.10	14.19	3.37	6.94	11.26	7.55
95th-Percentile Queue Length [ft]	716.65	902.43	354.67	84.26	173.38	281.45	188.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	89.94	0.00	134.62	32.46	0.00	24.59	0.00	0.00	9.46	0.00	32.19	11.53
Movement LOS	F		F	C		C			A		C	B
d_A, Approach Delay [s/veh]	111.33			31.56			9.46			15.84		
Approach LOS	F			C			A			B		
d_I, Intersection Delay [s/veh]	42.04											
Intersection LOS	D											
Intersection V/C	0.649											

Sequence





Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Argyle & Franklin / US 101 NB On-ramp

Control Type:	Signalized	Delay (sec / veh):	93.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.165

Intersection Setup

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	50.00	100.00	50.00	85.00	100.00	150.00	175.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Argyle Ave			Argyle Ave			Franklin Ave			Franklin		
Base Volume Input [veh/h]	705	52	163	57	92	47	483	1174	112	121	797	940
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	705	52	163	57	92	47	483	1174	112	121	797	940
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	176	13	41	14	23	12	121	294	28	30	199	235
Total Analysis Volume [veh/h]	705	52	163	57	92	47	483	1174	112	121	797	940
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	15	0	11	47	0	9	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	6	6	6	57	45	45	8	41	41
g / C, Green / Cycle	0.17	0.17	0.17	0.07	0.07	0.07	0.63	0.50	0.50	0.09	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.10	0.03	0.05	0.03	0.76	0.33	0.07	0.07	0.43	0.59
s, saturation flow rate [veh/h]	1774	1786	1583	1774	1863	1583	632	3547	1583	1774	1863	1583
c, Capacity [veh/h]	296	298	264	128	134	114	389	1759	785	155	851	724
d1, Uniform Delay [s]	37.51	37.51	34.84	40.06	40.78	39.95	34.53	17.09	12.30	40.22	23.19	24.44
k, delay calibration	0.19	0.18	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	135.17	132.18	2.35	2.44	6.09	2.38	129.27	2.02	0.38	8.15	18.74	144.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.28	1.27	0.62	0.45	0.69	0.41	1.24	0.67	0.14	0.78	0.94	1.30
d, Delay for Lane Group [s/veh]	172.68	169.69	37.19	42.49	46.88	42.33	163.80	19.11	12.68	48.37	41.93	168.96
Lane Group LOS	F	F	D	D	D	D	F	B	B	D	D	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	17.48	17.34	3.43	1.28	2.19	1.06	17.15	9.02	1.25	2.94	19.35	43.33
50th-Percentile Queue Length [ft]	436.89	433.59	85.85	32.08	54.84	26.49	428.71	225.43	31.34	73.50	483.68	1083.20
95th-Percentile Queue Length [veh]	27.13	26.90	6.18	2.31	3.95	1.91	27.76	13.94	2.26	5.29	26.56	64.29
95th-Percentile Queue Length [ft]	678.15	672.45	154.53	57.74	98.71	47.68	694.04	348.54	56.42	132.30	664.02	1607.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	171.29	169.69	37.19	42.49	46.88	42.33	163.80	19.11	12.68	48.37	41.93	168.96
Movement LOS	F	F	D	D	D	D	F	B	B	D	D	F
d_A, Approach Delay [s/veh]	147.44			44.51			58.21			106.62		
Approach LOS	F			D			E			F		
d_I, Intersection Delay [s/veh]	93.92											
Intersection LOS	F											
Intersection V/C	1.165											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Argyle & US 101 SB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.212

Intersection Setup

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	225.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Argyle Ave		Argyle Ave		US 101 SB On-ramp	
Base Volume Input [veh/h]	988	242	119	160	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	988	242	119	160	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	247	61	30	40	0	0
Total Analysis Volume [veh/h]	988	242	119	160	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.21	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	13.11	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh]	0.00	0.00	0.79	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	19.85	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		5.59		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.03					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 24: Gower & US 101 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	693.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.326

Intersection Setup

Name	Gower St		Gower St		US 101 NB Off-ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑		↑↑		↵↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Gower St		Gower St		US 101 NB Off-ramp	
Base Volume Input [veh/h]	1382	0	0	358	239	131
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1382	0	0	358	239	131
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	346	0	0	90	60	33
Total Analysis Volume [veh/h]	1382	0	0	358	239	131
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	2.33	0.34
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	692.99	18.99
Movement LOS	A			A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	21.25	1.47
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	531.24	36.70
d_A, Approach Delay [s/veh]	0.00		0.00		454.36	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	79.67					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 25: Gower & US 101 SB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	635.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.169

Intersection Setup

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Gower Street			Gower St			US 101 SB Off-ramp			Yucca St		
Base Volume Input [veh/h]	0	1031	18	13	582	0	324	16	471	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1031	18	13	582	0	324	16	471	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	258	5	3	146	0	81	4	118	0	0	0
Total Analysis Volume [veh/h]	0	1031	18	13	582	0	324	16	471	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.01	0.00	2.06	0.17	0.67	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	10.57	0.00	0.00	620.49	635.66	19.73	0.00	0.00	0.00
Movement LOS		A	A	B	A		F	F	C			
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	2.35	1.17	0.00	27.98	16.56	5.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	58.66	29.33	0.00	699.57	413.89	128.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.23			271.89			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	89.87											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 26: Gower Street & Yucca Street

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 88.1
 Level Of Service: F
 Volume to Capacity (v/c): 0.634

Intersection Setup

Name	Gower Street		Gower Street		Yucca Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Gower Street		Gower Street		Yucca Street	
Base Volume Input [veh/h]	109	1052	289	754	63	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	1052	289	754	63	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	263	72	189	16	13
Total Analysis Volume [veh/h]	109	1052	289	754	63	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.01	0.00	0.01	0.63	0.11
d_M, Delay for Movement [s/veh]	11.50	0.00	0.00	0.00	88.08	59.02
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	10.49	5.25	0.00	0.00	4.53	4.53
95th-Percentile Queue Length [ft]	262.26	131.13	0.00	0.00	113.19	113.19
d_A, Approach Delay [s/veh]	1.08		0.00		74.80	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	4.28					
Intersection LOS	F					

Intersection Level Of Service Report**Intersection 27: US 101 SB Off-Ramp/Van Ness Ave & Harold Way**

Control Type:	All-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.569

Intersection Setup

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Van Ness Ave		US 101 SB Off-Ramp		Harold Way	
Base Volume Input [veh/h]	134	0	871	4	0	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	0	871	4	0	32
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	0	218	1	0	8
Total Analysis Volume [veh/h]	134	0	871	4	0	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	858	769	770	990
Degree of Utilization, x	0.16	0.57	0.57	0.03

Movement, Approach, & Intersection Results



95th-Percentile Queue Length [veh]	0.55	3.64	3.63	0.10
95th-Percentile Queue Length [ft]	13.80	91.04	90.80	2.50
Approach Delay [s/veh]	7.97	13.37		6.76
Approach LOS	A	B		A
Intersection Delay [s/veh]	12.47			
Intersection LOS	B			

Intersection Level Of Service Report**Intersection 28: Wilton PI & US 101 NB Off-Ramp/Harold Way**

Control Type: All-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 8.1
 Level Of Service: A
 Volume to Capacity (v/c): 0.163

Intersection Setup

Name	Wilton PI				Wilton PI							
Approach	Northbound				Southbound				Eastbound			
Lane Configuration												
Turning Movement	Left	Left	Thru	Right	Left	Thru	Right	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	No				Yes				No			

Volumes

Name	Wilton PI				Wilton PI							
Base Volume Input [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	31	8	1	10	0	5	0	0	0	0
Total Analysis Volume [veh/h]	11	0	122	33	2	38	0	18	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			



Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	725	779	826	
Degree of Utilization, x	0.11	0.11	0.07	

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.39	0.36	0.23	
95th-Percentile Queue Length [ft]	9.65	8.91	5.65	
Approach Delay [s/veh]	8.09		7.69	0.00
Approach LOS	A		A	A
Intersection Delay [s/veh]	8.08			
Intersection LOS	A			

Intersection Setup

Name	Harold Way				US 101 NB Off-Ramp			
Approach	Westbound				Northeastbound			
Lane Configuration								
Turning Movement	Left	Thru	Thru	Right	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	No				No			

Volumes

Name	Harold Way				US 101 NB Off-Ramp			
Base Volume Input [veh/h]	93	0	2	38	0	17	11	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	0	2	38	0	17	11	122
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	1	10	0	4	3	31
Total Analysis Volume [veh/h]	93	0	2	38	0	17	11	122
Pedestrian Volume [ped/h]	0				0			

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	815	657	805
Degree of Utilization, x	0.16	0.04	0.15



Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.58	0.13	0.53
95th-Percentile Queue Length [ft]	14.51	3.33	13.33
Approach Delay [s/veh]	8.27	8.06	
Approach LOS	A	A	
Intersection Delay [s/veh]	8.08		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 29: US 101 SB On-ramp & Sunset

Control Type:	Two-way stop	Delay (sec / veh):	4,101.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	8.629

Intersection Setup

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	125.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	US 101 SB On-ramp		Sunset Blvd		Sunset Blvd	
Base Volume Input [veh/h]	0	0	2851	1144	95	2902
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	2851	1144	95	2902
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	713	286	24	726
Total Analysis Volume [veh/h]	0	0	2851	1144	95	2902
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.01	8.63	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	4101.89	0.00
Movement LOS			A	A	F	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	13.20	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	329.95	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		130.02	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	55.73					
Intersection LOS	F					

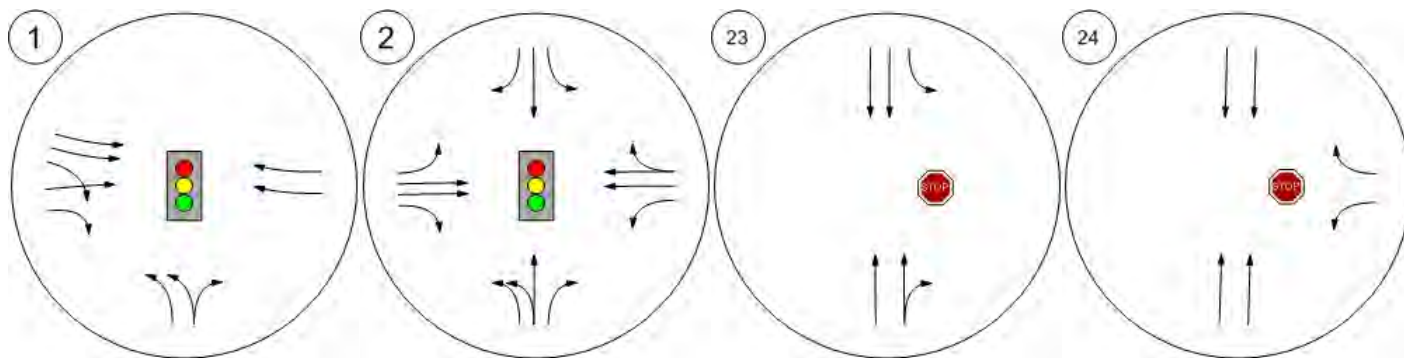
Study Intersections



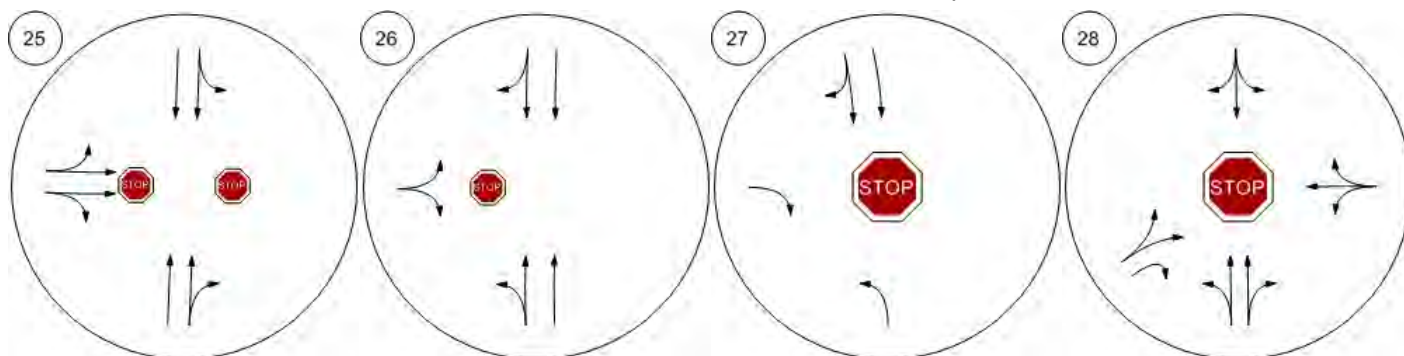
Lane Configuration and Traffic Control



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ramp Gower & US 101 NB Off-ramp



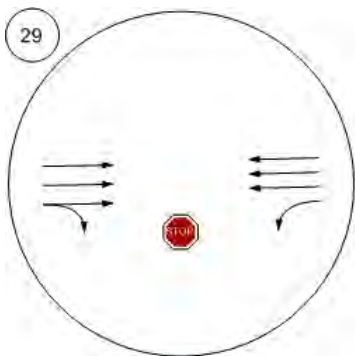
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Lane Configuration and Traffic Control



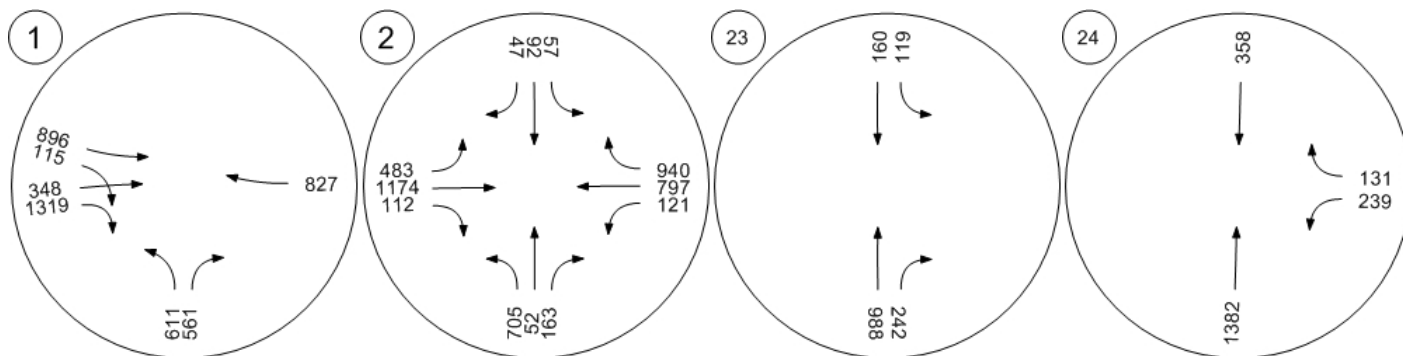
US 101 SB On-ramp & Suns



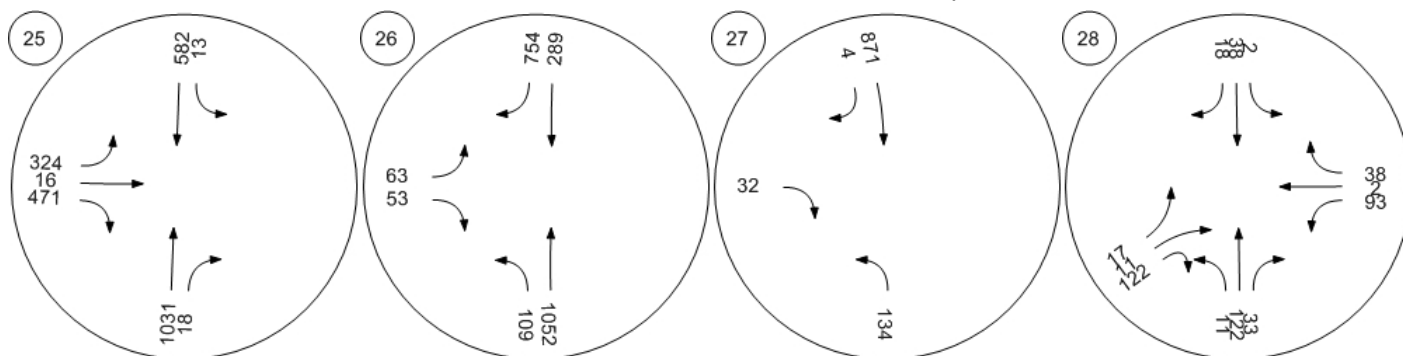
Traffic Volume - Base Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



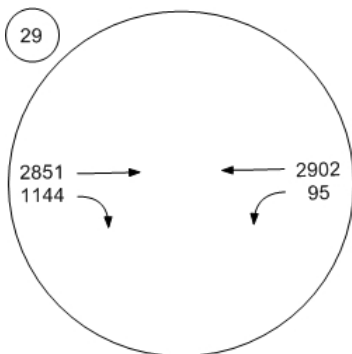
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Base Volume



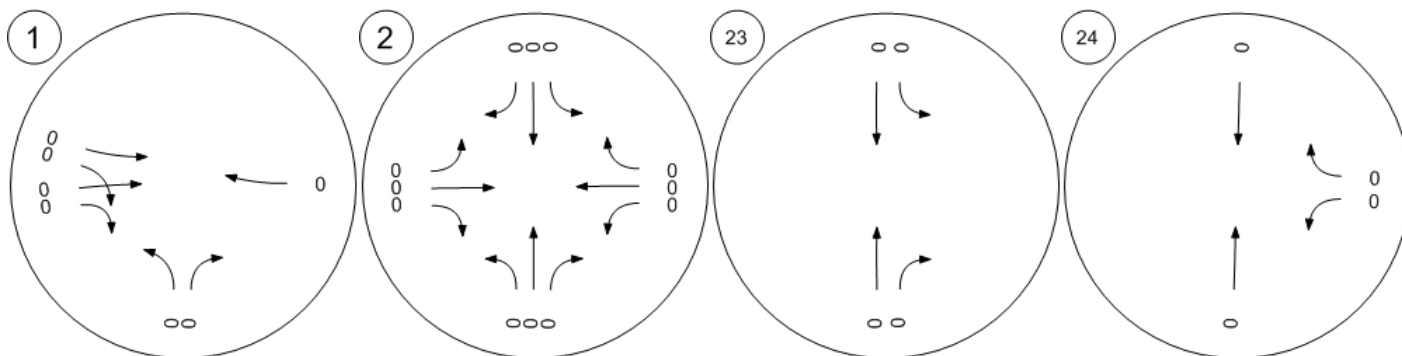
US 101 SB On-ramp & Suns



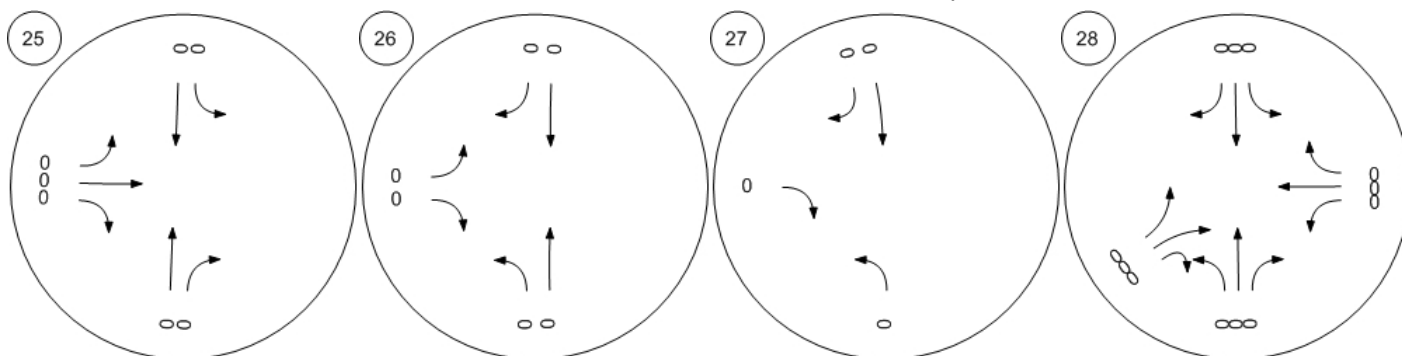
Traffic Volume - In-Process Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



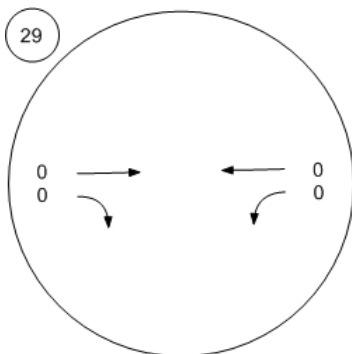
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - In-Process Volume



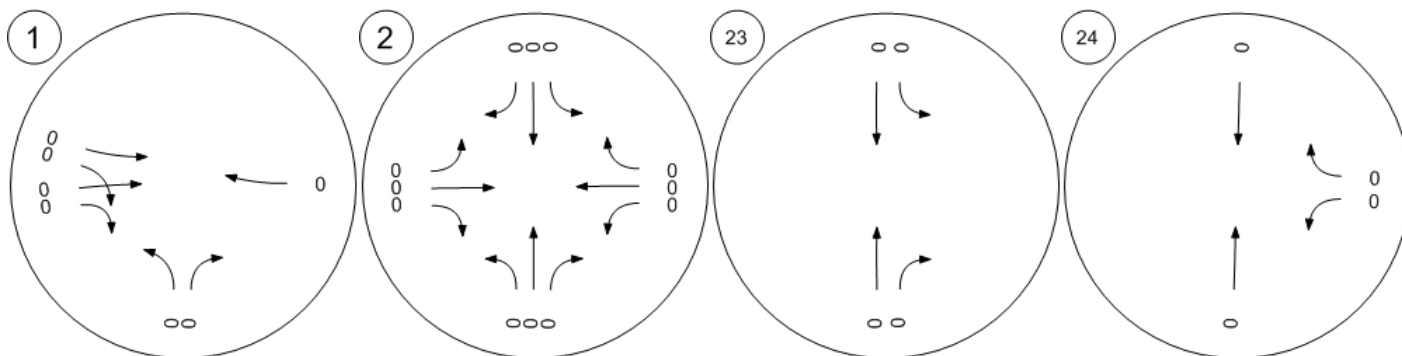
US 101 SB On-ramp & Suns



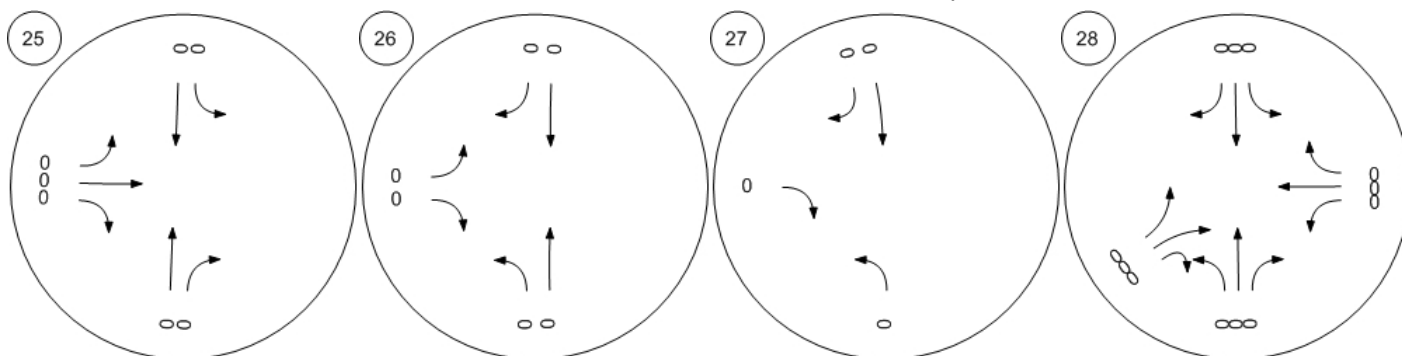
Traffic Volume - Net New Site Trips



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



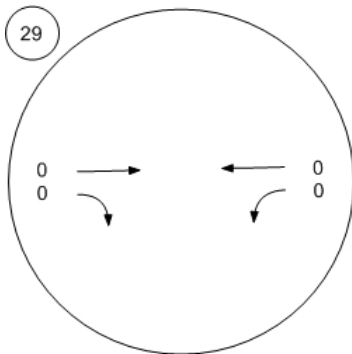
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Net New Site Trips



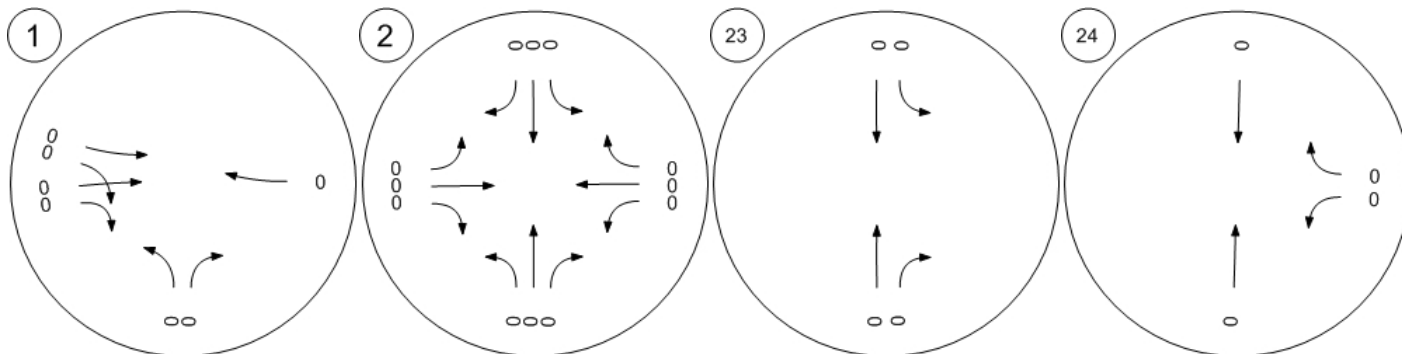
US 101 SB On-ramp & Suns



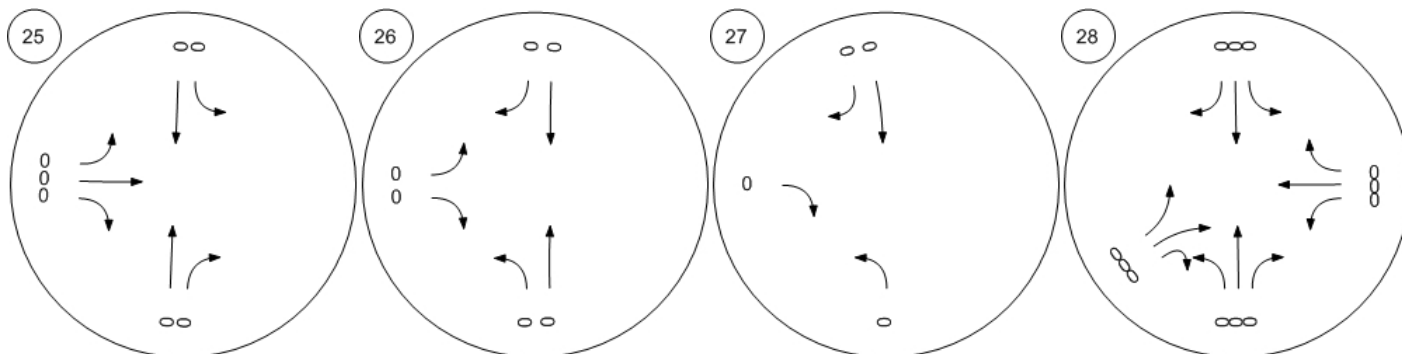
Traffic Volume - Other Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



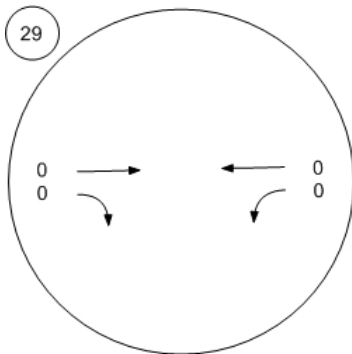
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Volume - Other Volume



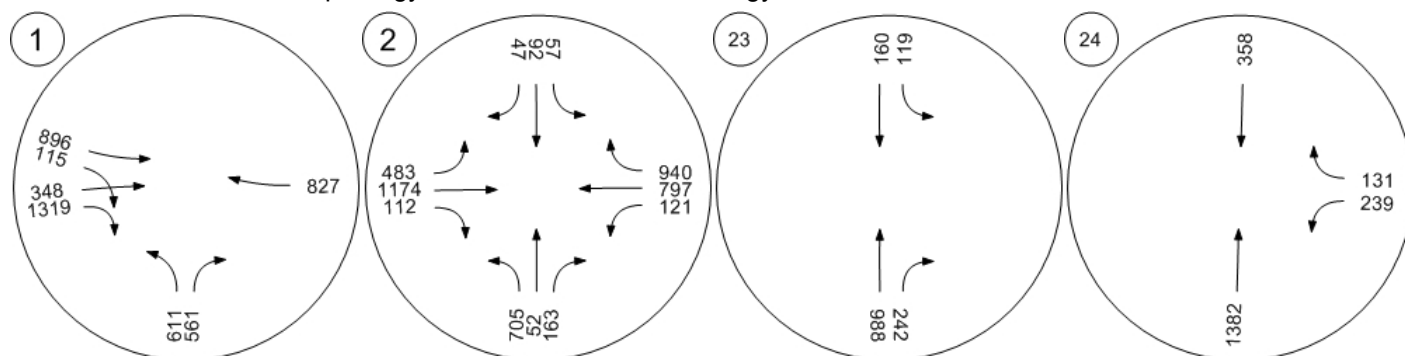
US 101 SB On-ramp & Suns



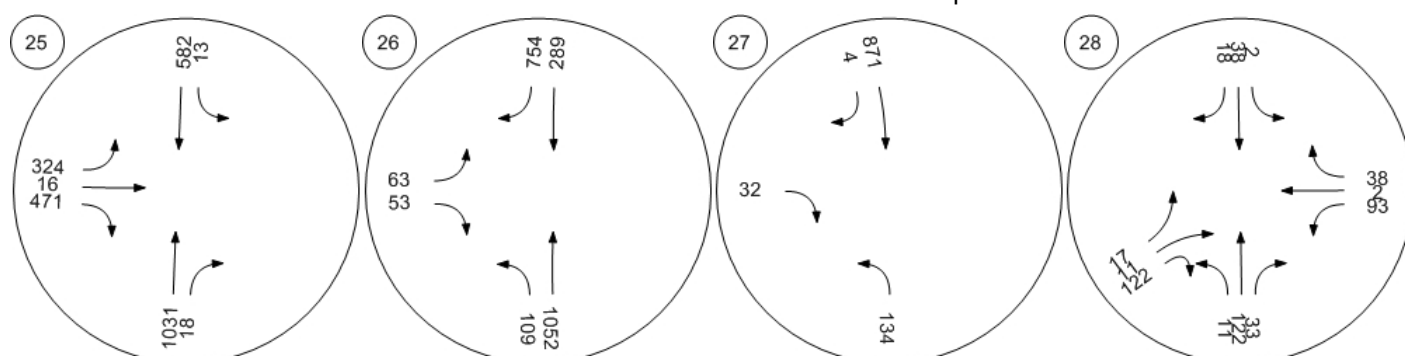
Traffic Volume - Future Total Volume



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



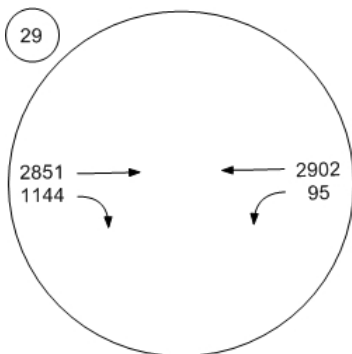
Gower & US 101 SB Off-ramp Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton Pl & US 101 NB Off-R



Traffic Volume - Future Total Volume



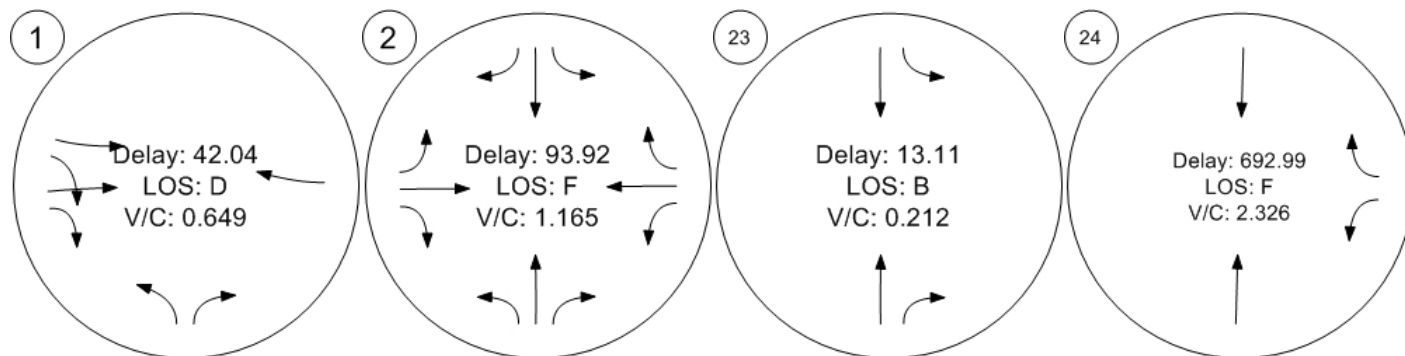
US 101 SB On-ramp & Suns



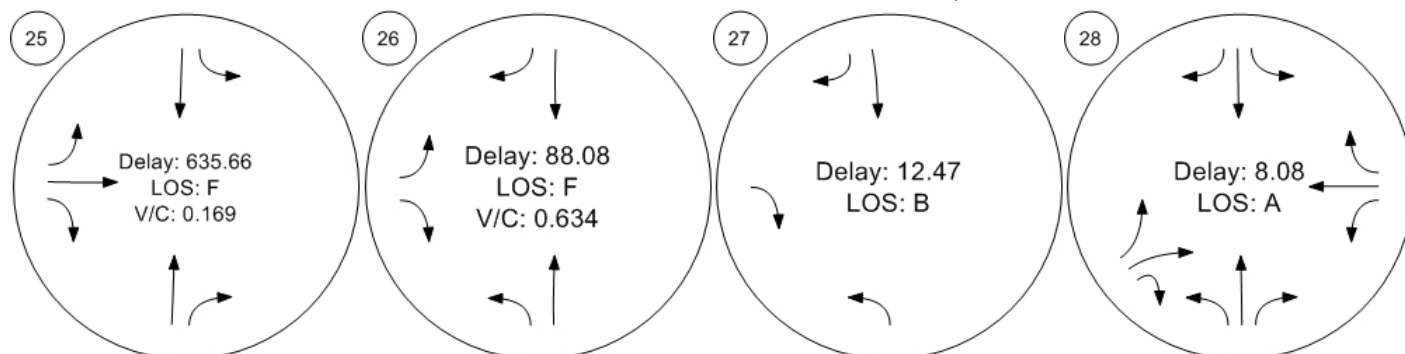
Traffic Conditions



Vine & US 101 SB Off-ramp / Argyle & Franklin / US 101 N Argyle & US 101 SB On-ram Gower & US 101 NB Off-ram



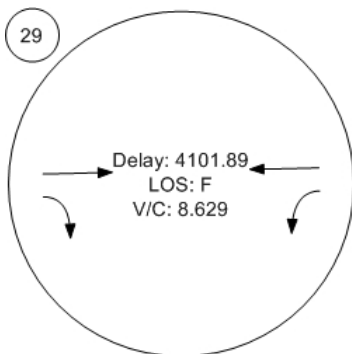
Gower & US 101 SB Off-ram Gower Street & Yucca Street US 101 SB Off-Ramp/Van Ne Wilton PI & US 101 NB Off-R



Traffic Conditions



US 101 SB On-ramp & Suns



Appendix J.2

LADOT Assessment Letter

From: Wes Pringle <wes.pringle@lacity.org>
Sent: Thursday, February 14, 2019 10:26 AM
To: Kathleen King
Cc: Emily Wong; Patrick Gibson
Subject: 1546 Argyle Av Mixed-Use Project (Revised)

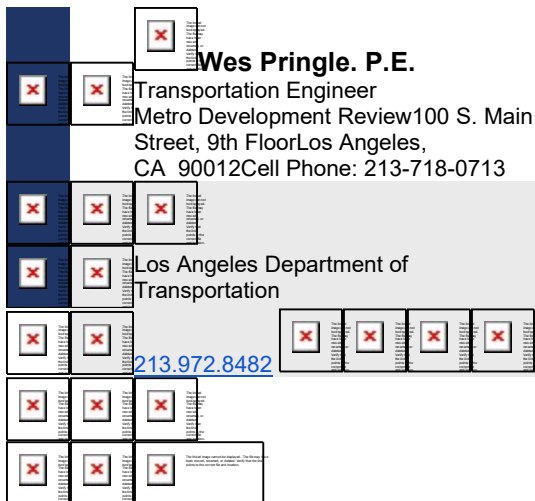
Hi Kathleen,

DOT has reviewed the February 2019 revision for the EIR of the traffic study for the Mixed-Use Project located at 1546 North Argyle Avenue. DOT concurs with the results of the revised study for the EIR that the findings of the original study will not change. The recommendations of DOT's May 8, 2019 letter reviewing the original study shall remain the same.

If you have any questions, please contact me.

Wes

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CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

1546 N Argyle Av
DOT Case No. CEN 17-45715

Date: May 8, 2018

To: Luciralia Ibarra, Senior City Planner
Department of City Planning



From: Wes Pringle, Transportation Engineer
Department of Transportation

Subject: **TRANSPORTATION IMPACT ASSESSMENT FOR THE MODERA ARGYLE MIXED-USE PROJECT LOCATED AT 1546 NORTH ARGYLE AVENUE (ENV-2016-3743-EIR/CPC-2016-3742-GPA-VZC-HD-DB-MCUP-SPR/VT-74566)**

The Department of Transportation (DOT) has reviewed the transportation impact study, dated March 2018, prepared by Gibson Transportation Consulting, Inc. for the proposed Modera Argyle mixed-use project located at 1546 North Argyle Avenue. In order to evaluate the effects of the project's traffic on the available transportation infrastructure, the significance of the project's traffic impacts is measured in terms of change to the volume-to-capacity (V/C) ratio between the "future no project" and the "future with project" scenarios. This change in the V/C ratio is compared to DOT's established threshold standards to assess the project-related traffic impacts. Based on DOT's current traffic impact criteria¹, the transportation study included the detailed analysis of 22 signalized intersections and seven unsignalized intersections and determined that none of these study intersections would be significantly impacted by project-related traffic prior to mitigation. This report summarizes the results of the transportation analysis (see **Attachment 1**), which accounted for other known development projects in evaluating potential cumulative impacts and adequately evaluated the project's traffic impacts on the surrounding community.

DISCUSSION AND FINDINGS

A. Project Description

The project proposes to demolish the existing office, retail, and warehouse uses, as well as the associated surface parking lot and construct the Modera Argyle mixed-use development consisting of up to 276 apartment units and approximately 24,000 square feet of ground floor commercial uses that would contain 9,000 square feet of retail uses and 15,000 square feet of restaurant uses located on the southeast corner of Argyle Avenue and Selma Avenue. The transportation impact analysis also considered an alternate project option (Supermarket Option) where the ground floor commercial space is developed with a 27,000 square foot supermarket. The project would provide parking on-site in a multi-level parking garage. Access to the parking garage would be provided via a full-access driveway along Selma Avenue. Access to the loading area would be provided by a driveway west of the parking garage driveway on Selma Avenue as illustrated in **Attachment 2**. The project is expected to be completed by 2023.

¹ Per the DOT Traffic Study Policies and Procedures, a significant impact is identified as an increase in the Critical Movement Analysis (CMA) value, due to project-related traffic, of 0.01 or more when the final ("with project") Level of Service (LOS) is LOS E or F; an increase of 0.020 or more when the final LOS is LOS D; or an increase of 0.040 or more when the final LOS is LOS C.

B. Trip Generation

The project is estimated to generate a net increase of approximately 2,013 daily trips, 170 trips during the a.m. peak hour and 179 trips during the p.m. peak hour; the project under the Supermarket Option is estimated to generate a net increase of approximately 1,971 daily trips, 117 trips during the a.m. peak hour and 192 trips during the p.m. peak hour. The trip generation estimates, summarized in **Attachment 3**, are based on rates and formulas published by the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012. These trip generation rates are typically derived from surveys of similar stand-alone (single) land use projects in suburban areas with little to no transit service. Therefore, DOT's transportation impact study guidelines allow projects to reduce their total trip generation to account for potential transit usage to and from the site and for the internal-trip making opportunities that are afforded by mixed-use projects. Consistent with these guidelines, the estimated trip generation includes trip credits to account for the mixed-use nature of the project and for the expected transit mode share.

C. Freeway Analysis

The traffic study included a freeway impact analysis that was prepared in accordance with the State-mandated Congestion Management Program (CMP) administered by the Los Angeles County Metropolitan Transportation Authority (MTA). According to this analysis, the project would not result in significant traffic impacts on any of the evaluated freeway mainline segments. To comply with the Freeway Analysis Agreement executed between Caltrans and DOT in December 2015, the study also included a screening analysis to determine if additional evaluation of freeway mainline and ramp segments was necessary beyond the CMP requirements. Exceeding one of the four screening criteria would require the applicant to work directly with Caltrans to prepare more detailed freeway analyses. The project did meet the threshold defined in the agreement; therefore, additional freeway analysis is required and included in the traffic study.

D. Gower Street & US 101 Southbound Off-Ramp/Yucca Street

In the preparation of traffic studies, DOT guidelines indicate that unsignalized intersections should be evaluated solely to determine the need for the installation of a traffic signal or other traffic control device. When choosing which unsignalized intersections to evaluate in the study, intersections that are adjacent to the project or that are integral to the project's site access and circulation plan, or that can facilitate pedestrian access should be identified.

The traffic study evaluated seven unsignalized intersections and included traffic signal warrant analyses for four of those intersections. In accordance with the guidelines established under the *California Manual of Uniform Traffic Control Devices*, Gower Street & US 101 Southbound Off-Ramp/Yucca Street meets a warrant threshold for signalization. However, the satisfaction of a traffic signal warrant does not in itself require the installation of a signal and it does not indicate that the unsignalized intersection would be significantly impacted by project-related traffic. Other factors relative to safety, traffic flow, signal spacing, coordination, etc. should be considered.

Since the intersection of Gower Street & US 101 Southbound Off-Ramp/Yucca Street is also under the jurisdiction of Caltrans, any improvements within Caltrans right-of-way would

need to be approved by Caltrans. Should the developer wish to pursue the installation of a new traffic signal at Gower Street & US 101 Southbound Off-Ramp/Yucca Street, it will require the approval of both Caltrans and LADOT. Additionally, all design, construction and installation costs will be the sole responsibility of the developer unless private arrangements can be made with other developers to share these costs.

If a new traffic signal is approved, the applicant should be required to plan, design, and install a new traffic signal at the intersection through the Bureau of Engineering (BOE) B-permit process. Prior to commencing design work on this new traffic signal, the applicant should work with DOT's Hollywood-Wilshire District Office to seek final approval of the traffic signal warrants and issuance of a Traffic Control Report authorizing the installation of the traffic signal. The traffic signal warrant analysis shall be prepared pursuant to Section 353 of DOT's Manual of Policies and Procedures and submitted by the applicant to DOT for review. It should be noted that installation of a traffic signal at Gower Street & US 101 Southbound Off-Ramp/Yucca Street is planned as part of another development.

PROJECT REQUIREMENTS

A. Construction Impacts

DOT recommends that a construction work site traffic control plan be submitted to DOT's Citywide Temporary Traffic Control Section or Permit Plan Review Section for review and approval prior to the start of any construction work. Refer to <http://ladot.lacity.org/what-we-do/plan-review> to determine which section to coordinate review of the work site traffic control plan. The plan should show the location of any roadway or sidewalk closures, traffic detours, haul routes, hours of operation, protective devices, warning signs and access to abutting properties. DOT also recommends that all construction related traffic be restricted to off-peak hours to the extent feasible.

B. Highway Dedication and Street Widening Requirements

On September 7, 2016, the City Council adopted the Mobility Plan 2035 which is the new Mobility Element of the General Plan. A key feature of the updated plan is to revise street standards in an effort to provide a more enhanced balance between traffic flow and other important street functions including transit routes and stops, pedestrian environments, bicycle routes, building design and site access, etc. The applicant should check with BOE's Land Development Group to determine the specific highway dedication, street widening and/or sidewalk requirements for this project. Per the new Mobility Element, **Argyle Avenue** and **Selma Avenue**, both Local Streets, would require an 18-foot half-width roadway within a 30-foot half-width right-of-way.

C. Parking Requirement

The project would provide the minimum code-required parking spaces within an on-site parking garage: 364 for automobiles and 328 for bicycles. Under the Supermarket Option, the project would provide a minimum of 370 automobile and 322 bicycle parking spaces. The developer should check with the Department of Building and Safety on the number of parking spaces needed.

D. Project Access and Circulation

Access to the project would be provided by driveways along Selma Avenue as illustrated in **Attachment 2**. The review of this study does not constitute approval of the driveway dimensions, access and circulation scheme, and loading/unloading area for the project. Any changes to the project's site access, circulation scheme, or loading/unloading area after issuance of this report would require separate review and approval and should be coordinated with DOT's Citywide Planning Coordination Section at 201 N. Figueroa Street, 5th Floor, Room 550, at (213) 482-7024. The applicant should contact DOT for driveway width and internal circulation requirements prior to the commencement of building or parking layout design efforts so that such traffic flow considerations are designed and incorporated early into the building and parking layout plans. If any project driveway will be signalized, the applicant should contact DOT's Permit Plan Review Section ladot.planprocessing@lacity.org for review of the traffic signal plan. All new driveways should be Case 2 driveways and 30 feet for two-way operations and any security gates should be a minimum 30 feet from the property line. Should the project include a supermarket, DOT recommends that a dock manager and/or flag person be employed to assist delivery truck access to the loading area. DOT may recommend additional requirements once a complete review of the loading operations is conducted.

E. Development Review Fees

An ordinance adding Section 19.15 to the Los Angeles Municipal Code relative to application fees paid to DOT for permit issuance activities was adopted by the Los Angeles City Council in 2009 and updated in 2014. This ordinance identifies specific fees for traffic study review, condition clearance, and permit issuance. The applicant shall comply with any applicable fees per this ordinance.

If you have any questions, please contact Eileen Hunt of my staff at (213) 972-8481.

Attachments

K:\Letters\2018\CEN17-45715_1546 Argyle_Modera Argyle MU_ts_ltr_20150508.doc

c: Amy Ablakat, Council District No. 13
Carl Mills, BOE Development Services
Bhuvan Bajaj, Hollywood-Wilshire District Office, DOT
Taimour Tanavoli, Case Management Office, DOT
Emily Wong, Gibson Transportation Consulting, Inc.

TABLE 10
FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.369 0.445	A A	0.371 0.446	A A	0.002 0.001	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.888 0.943	D E	0.897 0.947	D E	0.009 0.004	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.713 0.804	C D	0.717 0.808	C D	0.004 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.262 0.325	A A	0.262 0.325	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.603 0.597	B A	0.605 0.603	B B	0.002 0.006	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.279 0.453	A A	0.281 0.456	A A	0.002 0.003	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.375 0.306	A A	0.376 0.307	A A	0.001 0.001	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.629 0.621	B B	0.632 0.623	B B	0.003 0.002	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.904 0.897	F * F *	0.909 0.906	F * F *	0.005 0.009	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.630 0.695	B B	0.636 0.702	B C	0.006 0.007	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.843 0.843	D D	0.847 0.852	D D	0.004 0.009	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.279 0.307	A A	0.285 0.325	A A	0.006 0.018	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.645 0.628	B B	0.662 0.659	B B	0.017 0.031	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.443 0.383	A A	0.499 0.405	A A	0.056 0.022	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.685 0.631	B B	0.695 0.643	B B	0.010 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.957 1.109	F * F *	0.960 1.114	F * F *	0.003 0.005	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.485 0.449	A A	0.497 0.465	A A	0.012 0.016	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.507 0.695	A B	0.518 0.705	A C	0.011 0.010	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	1.007 1.028	F F	1.013 1.033	F F	0.006 0.005	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.860 0.885	D D	0.861 0.889	D D	0.001 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.746 0.940	C E	0.747 0.943	C E	0.001 0.003	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.605 0.737	B C	0.606 0.739	B C	0.001 0.002	NO NO

Notes

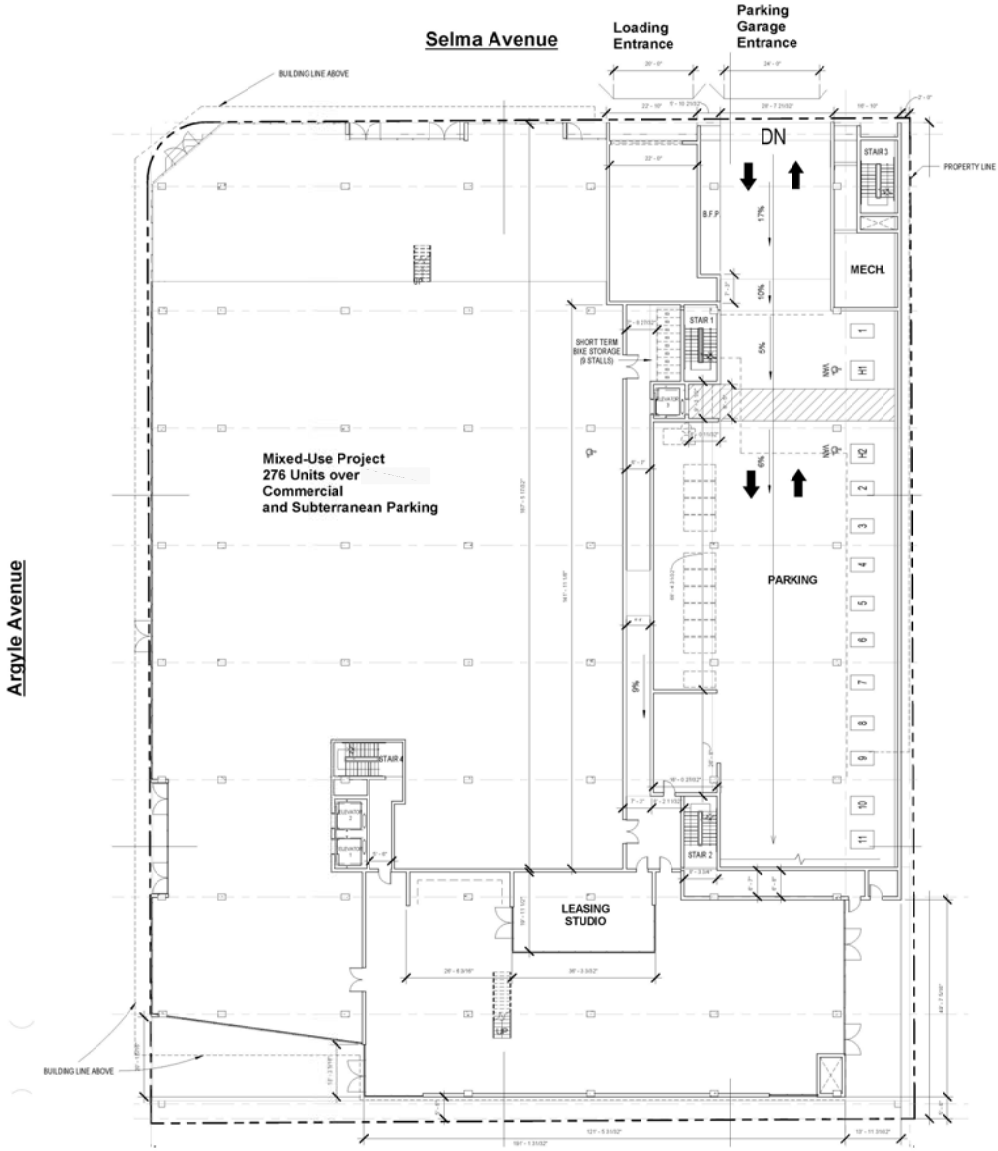
* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

TABLE 16
FUTURE WITH PROJECT CONDITIONS (YEAR 2023) - SUPERMARKET OPTION
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.369 0.445	A A	0.371 0.446	A A	0.002 0.001	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.888 0.943	D E	0.896 0.947	D E	0.008 0.004	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.713 0.804	C D	0.716 0.808	C D	0.003 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.262 0.325	A A	0.262 0.325	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.603 0.597	B A	0.604 0.603	B B	0.001 0.006	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.279 0.453	A A	0.280 0.457	A A	0.001 0.004	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.375 0.306	A A	0.376 0.307	A A	0.001 0.001	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.629 0.621	B B	0.631 0.623	B B	0.002 0.002	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.904 0.897	F * F *	0.906 0.906	F * F *	0.002 0.009	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.630 0.695	B B	0.634 0.703	B C	0.004 0.008	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.843 0.843	D D	0.845 0.852	D D	0.002 0.009	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.279 0.307	A A	0.281 0.325	A A	0.002 0.018	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.645 0.628	B B	0.659 0.659	B B	0.014 0.031	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.443 0.383	A A	0.487 0.410	A A	0.044 0.027	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.685 0.631	B B	0.693 0.643	B B	0.008 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.957 1.109	F * F *	0.958 1.114	F * F *	0.001 0.005	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.485 0.449	A A	0.493 0.466	A A	0.008 0.017	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.507 0.695	A B	0.515 0.705	A C	0.008 0.010	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	1.007 1.028	F F	1.010 1.033	F F	0.003 0.005	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.860 0.885	D D	0.861 0.889	D D	0.001 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.746 0.940	C E	0.747 0.943	C E	0.001 0.003	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.605 0.737	B C	0.606 0.739	B C	0.001 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.



Source: Carrier Johnson + Culture

SITE PLAN

FIGURE 1

TABLE 8
TRIP GENERATION

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
High-Turnover Restaurant	932	per ksf	127.15	55%	45%	10.81	60%	40%	9.85
Proposed Project									
Apartment Less 15% Transit/Walk-In Adjustment [b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Retail Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 50% Pass-by Reduction [d]	820	9 ksf	384 (77) (46) (131)	6 (1) (1) (2)	3 (1) 0 (1)	9 (2) (1) (3)	16 (3) (2) (6)	17 (3) (2) (6)	33 (6) (4) (12)
Subtotal - Retail			130	2	1	3	5	6	11
Restaurant Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 20% Pass-by Reduction [d]	932	15 ksf	1,907 (381) (229) (259)	89 (18) (11) (12)	73 (15) (9) (10)	162 (33) (20) (22)	89 (18) (11) (12)	59 (12) (7) (8)	148 (30) (18) (20)
Subtotal - Restaurant			1,038	48	39	87	48	32	80
Total - Proposed Project			2,728	74	136	210	147	89	236
Existing Uses to be Removed									
Warehouse Less 15% Transit/Walk-In Adjustment [b]	150	32.634 ksf	116 (17)	8 (1)	2 0	10 (1)	3 0	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office Less 15% Transit/Walk-In Adjustment [b]	710	15.182 ksf	167 (25)	21 (3)	3 0	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial Less 15% Transit/Walk-In Adjustment [b] Less 10% Pass-by Reduction [d]	826 [e]	14 ksf	620 (93) (53)	8 (1) (1)	5 (1) 0	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			474	6	4	10	13	16	29
Total - Existing Uses to be Removed			715	31	9	40	19	38	57
Net New Project Trips			2,013	43	127	170	128	51	179

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.

**TABLE 14
TRIP GENERATION - SUPERMARKET OPTION**

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<u>Trip Generation Rates</u> [a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
Supermarket	850	per ksf	102.24	62%	38%	3.40	51%	49%	9.48
<u>Proposed Project</u>									
Apartment Less 15% Transit/Walk-In Adjustment [b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Supermarket Less 20% Internal Capture [c] Less 15% Transit/Walk-In Adjustment [b] Less 40% Pass-by Reduction [d]	850	27 ksf	2,760 (552) (331) (751)	57 (11) (7) (16)	35 (7) (4) (10)	92 (18) (11) (26)	131 (26) (16) (36)	125 (25) (15) (34)	256 (51) (31) (70)
Subtotal - Supermarket			1,126	23	14	37	53	51	104
Total - Proposed Project			2,686	47	110	157	147	102	249
<u>Existing Uses to be Removed</u>									
Warehouse Less 15% Transit/Walk-In Adjustment [b]	150	32.634 ksf	116 (17)	8 (1)	2 0	10 (1)	3 0	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office Less 15% Transit/Walk-In Adjustment [b]	710	15.182 ksf	167 (25)	21 (3)	3 0	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial Less 15% Transit/Walk-In Adjustment [b] Less 10% Pass-by Reduction [d]	826 [e]	14 ksf	620 (93) (53)	8 (1) (1)	5 (1) 0	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			474	6	4	10	13	16	29
Total - Existing Uses to be Removed			715	31	9	40	19	38	57
Net New Project Trips			1,971	16	101	117	128	64	192

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.

Appendix J.3

ITE 9th Edition/10th Edition Comparison

TABLE 1
TRIP GENERATION RATE COMPARISON - TRIP GENERATION, 9TH EDITION VS. TRIP GENERATION, 10TH EDITION

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<u>Trip Generation, 9th Edition</u>									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
High-Turnover Restaurant	932	per ksf	127.15	55%	45%	10.81	60%	40%	9.85
Supermarket	850	per ksf	102.24	62%	38%	3.40	51%	49%	9.48
<u>Trip Generation, 10th Edition</u>									
Warehousing	150	per ksf	1.74	77%	23%	0.17	27%	73%	0.19
Multifamily Housing (Mid-Rise)	221	per du	5.44	26%	74%	0.36	61%	39%	0.44
General Office Building	710	per ksf	9.74	86%	14%	1.16	16%	84%	1.15
Shopping Center	820	per ksf	37.75	62%	38%	0.94	48%	52%	3.81
Specialty Retail	Trip rates are not included in <i>Trip Generation, 10th Edition</i>								
High-Turnover Restaurant	932	per ksf	112.18	55%	45%	9.94	62%	38%	9.77
Supermarket	850	per ksf	106.78	60%	40%	3.82	51%	49%	9.24

TABLE 2
TRIP GENERATION COMPARISON

Project Option	Daily	Trip Generation (Net New Trips)					
		AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
<u>Project</u>							
<i>Trip Generation, 9th Edition</i>	2,013	43	127	170	128	51	179
<i>Trip Generation, 10th Edition</i>	1,727	45	92	137	94	39	133
<i>Difference (Trip Generation, 10th Edition - Trip Generation, 9th Edition)</i>	(286)	2	(35)	(33)	(34)	(12)	(46)
<u>Supermarket Option</u>							
<i>Trip Generation, 9th Edition</i>	1,971	16	101	117	128	64	192
<i>Trip Generation, 10th Edition</i>	2,278	24	71	95	110	75	185
<i>Difference (Trip Generation, 10th Edition - Trip Generation, 9th Edition)</i>	307	8	(30)	(22)	(18)	11	(7)

**TABLE 3
TRIP GENERATION - ITE 9TH EDITION**

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
High-Turnover Restaurant	932	per ksf	127.15	55%	45%	10.81	60%	40%	9.85
Proposed Project									
Apartment <i>Less 15% Transit/Walk-In Adjustment</i> [b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Retail <i>Less 20% Internal Capture</i> [c] <i>Less 15% Transit/Walk-In Adjustment</i> [b] <i>Less 50% Pass-by Reduction</i> [d]	820	9 ksf	384 (77) (46) (131)	6 (1) (1) (2)	3 (1) (1) (1)	9 (2) (1) (3)	16 (3) (2) (6)	17 (3) (2) (6)	33 (6) (4) (12)
Subtotal - Retail			130	2	1	3	5	6	11
Restaurant <i>Less 20% Internal Capture</i> [c] <i>Less 15% Transit/Walk-In Adjustment</i> [b] <i>Less 20% Pass-by Reduction</i> [d]	932	15 ksf	1,907 (381) (229) (259)	89 (18) (11) (12)	73 (15) (9) (10)	162 (33) (20) (22)	89 (18) (11) (12)	59 (12) (7) (8)	148 (30) (18) (20)
Subtotal - Restaurant			1,038	48	39	87	48	32	80
Total - Proposed Project			2,728	74	136	210	147	89	236
Existing Uses to be Removed									
Warehouse <i>Less 15% Transit/Walk-In Adjustment</i> [b]	150	32.634 ksf	116 (17)	8 (1)	2 (0)	10 (1)	3 (0)	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office <i>Less 15% Transit/Walk-In Adjustment</i> [b]	710	15.182 ksf	167 (25)	21 (3)	3 (0)	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial <i>Less 15% Transit/Walk-In Adjustment</i> [b] <i>Less 10% Pass-by Reduction</i> [d]	826 [e]	14 ksf	620 (93) (53)	8 (1) (1)	5 (1) (0)	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			474	6	4	10	13	16	29
Total - Existing Uses to be Removed			715	31	9	40	19	38	57
Net New Project Trips			2,013	43	127	170	128	51	179

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.

TABLE 4
TRIP GENERATION - ITE 10TH EDITION

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Warehousing	150	per ksf	1.74	77%	23%	0.17	27%	73%	0.19
Multifamily Housing (Mid-Rise)	221	per du	5.44	26%	74%	0.36	61%	39%	0.44
General Office Building	710	per ksf	9.74	86%	14%	1.16	16%	84%	1.15
Shopping Center	820	per ksf	37.75	62%	38%	0.94	48%	52%	3.81
Specialty Retail	Trip rates are not included in <i>Trip Generation, 10th Edition</i>								
High-Turnover Restaurant	932	per ksf	112.18	55%	45%	9.94	62%	38%	9.77
Proposed Project									
Apartment <i>Less 15% Transit/Walk-In Adjustment</i> [b]	220	276 du	1,501 (225)	26 (4)	73 (11)	99 (15)	74 (11)	47 (7)	121 (18)
Subtotal - Apartment			1,276	22	62	84	63	40	103
Retail <i>Less 20% Internal Capture</i> [c] <i>Less 15% Transit/Walk-In Adjustment</i> [b] <i>Less 50% Pass-by Reduction</i> [d]	820	9 ksf	340 (68) (41) (116)	5 (1) (1) (2)	3 (1) (1) (1)	8 (2) (1) (3)	16 (3) (2) (6)	18 (4) (2) (6)	34 (7) (4) (12)
Subtotal - Retail			115	1	1	2	5	6	11
Restaurant <i>Less 20% Internal Capture</i> [c] <i>Less 15% Transit/Walk-In Adjustment</i> [b] <i>Less 20% Pass-by Reduction</i> [d]	932	15 ksf	1,683 (337) (202) (229)	82 (16) (10) (11)	67 (13) (8) (9)	149 (29) (18) (20)	91 (18) (11) (12)	56 (11) (7) (8)	147 (29) (18) (20)
Subtotal - Restaurant			915	45	37	82	50	30	80
Total - Proposed Project			2,306	68	100	168	118	76	194
Existing Uses to be Removed									
Warehouse <i>Less 15% Transit/Walk-In Adjustment</i> [b]	150	32.634 ksf	57 (9)	5 (1)	1 (1)	6 (1)	2 (1)	4 (1)	6 (1)
Subtotal - Commercial			48	4	1	5	2	3	5
Office <i>Less 15% Transit/Walk-In Adjustment</i> [b]	710	15.182 ksf	148 (22)	15 (2)	3 (1)	18 (2)	3 (1)	14 (2)	17 (2)
Subtotal - Commercial			126	13	3	16	3	12	15
Commercial <i>Less 15% Transit/Walk-In Adjustment</i> [b] <i>Less 10% Pass-by Reduction</i> [d]	826 [e]	14 ksf	529 (79) (45)	8 (1) (1)	5 (1) (1)	13 (2) (1)	25 (4) (2)	28 (4) (2)	53 (8) (4)
Subtotal - Commercial			405	6	4	10	19	22	41
Total - Existing Uses to be Removed			579	23	8	31	24	37	61
Net New Project Trips			1,727	45	92	137	94	39	133

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 10th Edition*, Institute of Transportation Engineers, 2017.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] Trip rates for Specialty Retail uses are no longer provided in *Trip Generation, 10th Edition*. Therefore, Shopping Center trip rates were utilized.

TABLE 5
EXISTING WITH PROJECT CONDITIONS
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Existing Conditions		Existing with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.318 0.373	A A	0.319 0.374	A A	0.001 0.001	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.739 0.747	C C	0.745 0.750	C C	0.006 0.003	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.653 0.732	B C	0.656 0.736	B C	0.003 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.213 0.267	A A	0.213 0.267	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.489 0.456	A A	0.491 0.461	A A	0.002 0.005	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.187 0.316	A A	0.187 0.319	A A	0.000 0.003	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.332 0.259	A A	0.332 0.259	A A	0.000 0.000	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.526 0.495	A A	0.528 0.497	A A	0.002 0.002	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.736 0.679	D * D *	0.741 0.686	D * D *	0.005 0.007	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.491 0.481	A A	0.496 0.486	A A	0.005 0.005	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.682 0.629	B B	0.685 0.637	B B	0.003 0.008	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.249 0.280	A A	0.255 0.293	A A	0.006 0.013	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.561 0.544	A A	0.573 0.567	A A	0.012 0.023	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.405 0.344	A A	0.445 0.359	A A	0.040 0.015	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.563 0.540	A A	0.571 0.548	A A	0.008 0.008	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.784 0.861	D * D *	0.786 0.864	D * D *	0.002 0.003	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.385 0.319	A A	0.396 0.329	A A	0.011 0.010	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.396 0.544	A A	0.405 0.551	A A	0.009 0.007	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	0.742 0.758	C C	0.747 0.761	C C	0.005 0.003	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.668 0.693	B B	0.670 0.696	B B	0.002 0.003	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.610 0.737	B C	0.611 0.739	B C	0.001 0.002	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.525 0.582	A A	0.527 0.583	A A	0.002 0.001	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

TABLE 6
FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.369 0.445	A A	0.371 0.445	A A	0.002 0.000	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.888 0.943	D E	0.894 0.946	D E	0.006 0.003	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.713 0.804	C D	0.716 0.808	C D	0.003 0.004	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.262 0.325	A A	0.262 0.325	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.603 0.597	B A	0.605 0.601	B B	0.002 0.004	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.279 0.453	A A	0.280 0.455	A A	0.001 0.002	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.375 0.306	A A	0.376 0.306	A A	0.001 0.000	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.629 0.621	B B	0.631 0.623	B B	0.002 0.002	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.904 0.897	F * F *	0.909 0.903	F * F *	0.005 0.006	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.630 0.695	B B	0.635 0.701	B C	0.005 0.006	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.843 0.843	D D	0.847 0.849	D D	0.004 0.006	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.279 0.307	A A	0.285 0.320	A A	0.006 0.013	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.645 0.628	B B	0.657 0.651	B B	0.012 0.023	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.443 0.383	A A	0.483 0.398	A A	0.040 0.015	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.685 0.631	B B	0.693 0.639	B B	0.008 0.008	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.957 1.109	F * F *	0.960 1.113	F * F *	0.003 0.004	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.485 0.449	A A	0.495 0.461	A A	0.010 0.012	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.507 0.695	A B	0.515 0.703	A C	0.008 0.008	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	1.007 1.028	F F	1.012 1.032	F F	0.005 0.004	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.860 0.885	D D	0.861 0.888	D D	0.001 0.003	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.746 0.940	C E	0.747 0.943	C E	0.001 0.003	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.605 0.737	B C	0.606 0.739	B C	0.001 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

TABLE 7
TRIP GENERATION - SUPERMARKET OPTION - ITE 9TH EDITION

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<u>Trip Generation Rates</u> ^[a]									
Warehouse	150	per ksf	3.56	79%	21%	0.30	25%	75%	0.32
Apartment	220	per du	6.65	20%	80%	0.51	65%	35%	0.62
General Office Building	710	per ksf	11.03	88%	12%	1.56	17%	83%	1.49
Shopping Center	820	per ksf	42.7	62%	38%	0.96	48%	52%	3.71
Specialty Retail	826	per ksf	44.32	N/A	N/A	N/A	44%	56%	2.71
Supermarket	850	per ksf	102.24	62%	38%	3.40	51%	49%	9.48
<u>Proposed Project</u>									
Apartment <i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	220	276 du	1,835 (275)	28 (4)	113 (17)	141 (21)	111 (17)	60 (9)	171 (26)
Subtotal - Apartment			1,560	24	96	120	94	51	145
Supermarket <i>Less 20% Internal Capture</i> ^[c] <i>Less 15% Transit/Walk-In Adjustment</i> ^[b] <i>Less 40% Pass-by Reduction</i> ^[d]	850	27 ksf	2,760 (552) (331) (751)	57 (11) (7) (16)	35 (7) (4) (10)	92 (18) (11) (26)	131 (26) (16) (36)	125 (25) (15) (34)	256 (51) (31) (70)
Subtotal - Supermarket			1,126	23	14	37	53	51	104
Total - Proposed Project			2,686	47	110	157	147	102	249
<u>Existing Uses to be Removed</u>									
Warehouse <i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	150	32.634 ksf	116 (17)	8 (1)	2 0	10 (1)	3 0	7 (1)	10 (1)
Subtotal - Commercial			99	7	2	9	3	6	9
Office <i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	710	15.182 ksf	167 (25)	21 (3)	3 0	24 (3)	4 (1)	19 (3)	23 (4)
Subtotal - Commercial			142	18	3	21	3	16	19
Commercial <i>Less 15% Transit/Walk-In Adjustment</i> ^[b] <i>Less 10% Pass-by Reduction</i> ^[d]	826 ^[e]	14 ksf	620 (93) (53)	8 (1) (1)	5 (1) 0	13 (2) (1)	17 (3) (1)	21 (3) (2)	38 (6) (3)
Subtotal - Commercial			474	6	4	10	13	16	29
Total - Existing Uses to be Removed			715	31	9	40	19	38	57
Net New Project Trips			1,971	16	101	117	128	64	192

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] In the absence of available AM peak hour trip rates for Specialty Retail (ITE 826) uses in *Trip Generation, 9th Edition*, AM rates for Shopping Center (ITE 820) uses were applied.

TABLE 8
TRIP GENERATION - SUPERMARKET OPTION - ITE 10TH EDITION

Land Use	ITE Land Use Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<u>Trip Generation Rates</u> ^[a]									
Warehousing	150	per ksf	1.74	77%	23%	0.17	27%	73%	0.19
Multifamily Housing (Mid-Rise)	221	per du	5.44	26%	74%	0.36	61%	39%	0.44
General Office Building	710	per ksf	9.74	86%	14%	1.16	16%	84%	1.15
Shopping Center	820	per ksf	37.75	62%	38%	0.94	48%	52%	3.81
Specialty Retail	Trip rates are not included in <i>Trip Generation, 10th Edition</i>								
Supermarket	850	per ksf	106.78	60%	40%	3.82	51%	49%	9.24
<u>Proposed Project</u>									
Apartment	220	276 du	1,501	26	73	99	74	47	121
			<i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	<i>(225)</i>	<i>(4)</i>	<i>(11)</i>	<i>(15)</i>	<i>(11)</i>	<i>(7)</i>
Subtotal - Apartment			1,276	22	62	84	63	40	103
Supermarket	850	27 ksf	2,883	62	41	103	127	122	249
			<i>Less 20% Internal Capture</i> ^[c]	<i>(577)</i>	<i>(12)</i>	<i>(8)</i>	<i>(20)</i>	<i>(25)</i>	<i>(24)</i>
			<i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	<i>(346)</i>	<i>(8)</i>	<i>(5)</i>	<i>(13)</i>	<i>(15)</i>	<i>(30)</i>
			<i>Less 40% Pass-by Reduction</i> ^[d]	<i>(784)</i>	<i>(17)</i>	<i>(11)</i>	<i>(28)</i>	<i>(35)</i>	<i>(33)</i>
Subtotal - Supermarket			1,176	25	17	42	52	50	102
Total - Proposed Project			2,452	47	79	126	115	90	205
<u>Existing Uses to be Removed</u>									
Warehouse	150	32.634 ksf	57	5	1	6	2	4	6
			<i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	<i>(9)</i>	<i>(1)</i>	<i>0</i>	<i>(1)</i>	<i>0</i>	<i>(1)</i>
Subtotal - Commercial			48	4	1	5	2	3	5
Office	710	15.182 ksf	148	15	3	18	3	14	17
			<i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	<i>(22)</i>	<i>(2)</i>	<i>0</i>	<i>(2)</i>	<i>0</i>	<i>(2)</i>
Subtotal - Commercial			126	13	3	16	3	12	15
Commercial	826 ^[e]	14 ksf	0	8	5	13	0	0	0
			<i>Less 15% Transit/Walk-In Adjustment</i> ^[b]	<i>0</i>	<i>(1)</i>	<i>(1)</i>	<i>0</i>	<i>0</i>	<i>0</i>
			<i>Less 10% Pass-by Reduction</i> ^[d]	<i>0</i>	<i>(1)</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Subtotal - Commercial			0	6	4	10	0	0	0
Total - Existing Uses to be Removed			174	23	8	31	5	15	20
Net New Project Trips			2,278	24	71	95	110	75	185

du: dwelling unit

ksf: 1,000 square feet

[a] Source: *Trip Generation, 10th Edition*, Institute of Transportation Engineers, 2017.

[b] The Project site is located within a 1/4 mile of the Metro Red Line Hollywood Vine station and a RapidBus stop, therefore a 15% transit adjustment was applied, per *Transportation Impact Study Guidelines* (LADOT, December 2016).

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system.

[d] Pass-by adjustments account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

[e] Trip rates for Specialty Retail uses are no longer provided in *Trip Generation, 10th Edition*. Therefore, Shopping Center trip rates were utilized.

TABLE 9
EXISTING WITH PROJECT CONDITIONS - SUPERMARKET OPTION
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Existing Conditions		Existing with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.318 0.373	A A	0.319 0.374	A A	0.001 0.001	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.739 0.747	C C	0.744 0.752	C C	0.005 0.005	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.653 0.732	B C	0.656 0.737	B C	0.003 0.005	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.213 0.267	A A	0.213 0.267	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.489 0.456	A A	0.490 0.461	A A	0.001 0.005	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.187 0.316	A A	0.187 0.320	A A	0.000 0.004	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.332 0.259	A A	0.332 0.260	A A	0.000 0.001	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.526 0.495	A A	0.527 0.498	A A	0.001 0.003	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.736 0.679	D * D *	0.739 0.687	D * D *	0.003 0.008	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.491 0.481	A A	0.495 0.489	A A	0.004 0.008	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.682 0.629	B B	0.684 0.638	B B	0.002 0.009	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.249 0.280	A A	0.253 0.295	A A	0.004 0.015	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.561 0.544	A A	0.570 0.572	A A	0.009 0.028	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.405 0.344	A A	0.436 0.380	A A	0.031 0.036	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.563 0.540	A A	0.568 0.552	A A	0.005 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.784 0.861	D * D *	0.784 0.866	D * D *	0.000 0.005	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.385 0.319	A A	0.393 0.333	A A	0.008 0.014	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.396 0.544	A A	0.402 0.555	A A	0.006 0.011	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	0.742 0.758	C C	0.746 0.762	C C	0.004 0.004	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.668 0.693	B B	0.669 0.697	B B	0.001 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.610 0.737	B C	0.611 0.741	B C	0.001 0.004	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.525 0.582	A A	0.527 0.584	A A	0.002 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.

TABLE 10
FUTURE WITH PROJECT CONDITIONS (YEAR 2023) - SUPERMARKET OPTION
SIGNIFICANT IMPACT ANALYSIS AT SIGNALIZED INTERSECTIONS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions			
			V/C	LOS	V/C	LOS	Change in V/C	Significant Impact
1.	Vine Street & Franklin Avenue / US-101 SB Off-Ramp	AM PM	0.369 0.445	A A	0.371 0.445	A A	0.002 0.000	NO NO
2.	Argyle Avenue & Franklin Avenue / US-101 NB On-Ramp	AM PM	0.888 0.943	D E	0.893 0.947	D E	0.005 0.004	NO NO
3.	Gower Street & Franklin Avenue	AM PM	0.713 0.804	C D	0.715 0.809	C D	0.002 0.005	NO NO
4.	Ivar Avenue & Yucca Street	AM PM	0.262 0.325	A A	0.262 0.325	A A	0.000 0.000	NO NO
5.	Vine Street & Yucca Street	AM PM	0.603 0.597	B A	0.605 0.603	B B	0.002 0.006	NO NO
6.	Argyle Avenue & Yucca Street	AM PM	0.279 0.453	A A	0.280 0.457	A A	0.001 0.004	NO NO
7.	Gower Street & Carlos Avenue	AM PM	0.375 0.306	A A	0.376 0.307	A A	0.001 0.001	NO NO
8.	Ivar Avenue & Hollywood Boulevard	AM PM	0.629 0.621	B B	0.631 0.623	B B	0.002 0.002	NO NO
9.	Vine Street & Hollywood Boulevard	AM PM	0.904 0.897	F * F *	0.907 0.906	F * F *	0.003 0.009	NO NO
10.	Argyle Avenue & Hollywood Boulevard	AM PM	0.630 0.695	B B	0.633 0.704	B C	0.003 0.009	NO NO
11.	Gower Street & Hollywood Boulevard	AM PM	0.843 0.843	D D	0.845 0.851	D D	0.002 0.008	NO NO
12.	Ivar Avenue & Selma Avenue	AM PM	0.279 0.307	A A	0.282 0.322	A A	0.003 0.015	NO NO
13.	Vine Street & Selma Avenue	AM PM	0.645 0.628	B B	0.655 0.656	B B	0.010 0.028	NO NO
14.	Argyle Avenue & Selma Avenue	AM PM	0.443 0.383	A A	0.474 0.419	A A	0.031 0.036	NO NO
15.	Gower Street & Selma Avenue	AM PM	0.685 0.631	B B	0.691 0.643	B B	0.006 0.012	NO NO
16.	Vine Street & Sunset Boulevard	AM PM	0.957 1.109	F * F *	0.959 1.114	F * F *	0.002 0.005	NO NO
17.	Argyle Avenue & Sunset Boulevard	AM PM	0.485 0.449	A A	0.491 0.464	A A	0.006 0.015	NO NO
18.	El Centro Avenue & Sunset Boulevard	AM PM	0.507 0.695	A B	0.513 0.707	A C	0.006 0.012	NO NO
19.	Gower Street & Sunset Boulevard	AM PM	1.007 1.028	F F	1.010 1.032	F F	0.003 0.004	NO NO
20.	Bronson Avenue & Sunset Boulevard	AM PM	0.860 0.885	D D	0.861 0.889	D D	0.001 0.004	NO NO
21.	Van Ness Avenue & Sunset Boulevard	AM PM	0.746 0.940	C E	0.747 0.943	C E	0.001 0.003	NO NO
22.	Wilton Place & Sunset Boulevard	AM PM	0.605 0.737	B C	0.605 0.739	B C	0.000 0.002	NO NO

Notes

* LOS based on field observations, as the CMA methodology for individual intersections does not in every case account for vehicular queues along corridors, pedestrian, conflicts, etc., and thus, the calculated average operating conditions may appear better than is observed.