ATTACHMENT 10

TRANSPORTATION STUDY FOR 10950 WASHINGTON BOULEVARD

CULVER CITY, CALIFORNIA

APRIL 2025

PREPARED FOR

HUDSON PACIFIC PROPERTIES

PREPARED BY

Gibson
transportation consulting, inc.

TRANSPORTATION STUDY
FOR
10950 WASHINGTON BOULEVARD

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Prepared for:

HUDSON PACIFIC PROPERTIES

Prepared by:

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Chapter 1
Introduction

This study presents the transportation assessment for the proposed mixed-use development project (Project) at 10950 Washington Boulevard (Project Site) in the City of Culver City, California (City). The methodology and base assumptions used in the analysis were established in conjunction with the Culver City Public Works Department (CCPWD) Mobility and Traffic Engineering Division.

PROJECT DESCRIPTION

The Project proposes the demolition of two existing office buildings and the construction of a new, mixed-use residential and commercial project with a public outdoor paseo. The redevelopment would include a total of 508 housing units, including 79 units of affordable housing, and 14,087 square feet (sf) of ground-floor, neighborhood-serving commercial space, replacing the existing 160,438 sf of office. Completion of the project is anticipated in Year 2030.

A total of 715 parking spaces would be provided on-site and accessed by two garage entrances provided at both Building A and Building B. The Level 1 parking entrances would lead to two at-grade parking garages, providing 30 commercial and guest spaces and 40 residential spaces on Level 1 of Building A and 39 residential spaces on Level 1 of Building B. The Level P1 parking entrances would provide ramps that lead to one subterranean parking garage spanning both Building A and Building B, providing 606 residential spaces. The entire parking area for both buildings will be physically secured for safety.

Vehicular access to the Project Site would be provided by two separate driveways along Washington Boulevard. The north driveway (Driveway A) would provide commercial, guest, and residential access to Building A from a fire lane along the northeast side of the property, and the south driveway (Driveway B) would provide residential access to Building B. Driveway B is an existing driveway, aligned with the west leg of Prospect Avenue, that would need to be modified as part of the Project to meet City design standards. Both driveways would provide full access operations, including both right- and left-turn ingress and egress along Washington Boulevard. Pedestrian access to the Project Site would be provided via separate lobby entrances and a public paseo accessed along Washington Boulevard.

The conceptual Project site plan is illustrated in Figure 1.

PROJECT LOCATION

As shown in Figure 2, the Project Site is bounded by the Washington Boulevard and Elenda Street to the north, residential uses to the east, Huron Avenue and residential uses to the south, and Washington Boulevard and residential uses to the west. The surrounding area is urbanized with a mixture of residential and commercial uses.

The Project is located approximately 0.4 miles east of the San Diego Freeway (I-405), which provides regional transportation along the southern and western parts of the Greater Los Angeles area from Irvine to the south to the San Fernando Valley to the north. Local access to the Project Site is primarily served by Washington Boulevard.

Nearby transit service is provided along Washington Boulevard, Venice Boulevard, and Culver Boulevard. The Project is within 0.5 miles of the Sepulveda Boulevard & Venice Boulevard intersection and, therefore, is within a Transit Priority Area (TPA). Additionally, the Project Site is located within 1.50 miles of the Los Angeles County Metropolitan Transportation Authority (Metro) E Line Culver City and Palms Stations.

STUDY SCOPE

The scope of analysis for this study was developed in consultation with the City and is consistent with *Culver City Transportation Study Criteria and Guidelines* (CCPWD, July 2020) (Guidelines) and in compliance with the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations, Title 14, Section 15000 and following). 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) that was reviewed and approved by CCPWD in April 2024 and is provided in Appendix A.

ORGANIZATION OF REPORT

This report is divided into six chapters, including this introduction. Chapter 2 describes the transportation network including the existing and future circulation system, traffic volumes, and traffic conditions in the Project area. Chapter 3 provides the Project traffic and trip distribution. Chapter 4 presents the CEQA analysis of transportation impacts. Chapter 5 details the non-CEQA transportation analyses. Chapter 6 summarizes the analyses and study conclusions. The appendices contain supporting documentation, including the signed MOU that outlines the study scope and assumptions and additional details supporting the technical analyses.

Source: KFA Architects. August, 2024.

PROJECT SITE PLAN

FIGURE 1

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LEGEND

Project Site

N
Not to Scale

PROJECT SITE LOCATION

FIGURE 2

Chapter 2
Transportation Network Review

A comprehensive data collection effort was undertaken to develop a detailed description of existing and future conditions in the Project area.

The Existing Conditions analysis includes an assessment of the existing transportation infrastructure and conditions including freeway and street systems, and transit service, as well as pedestrian and bicycle circulation, at the time the MOU was approved in April 2024. Fieldwork (lane configurations, signal phasing, parking restrictions, etc.) for the analyzed intersections was collected in Year 2025.

In addition, this Chapter contains a discussion of the Future Conditions assumptions used to develop the Future without Project Conditions in Year 2030, which corresponds to projected occupancy of the Project, and Cumulative without Project Conditions in Year 2045, which corresponds to the horizon year of the *Culver City General Plan 2045* (effective October 9, 2024) (General Plan).

STUDY AREA

The Project's transportation analysis Study Area, shown in Figure 3, includes intersections along Venice Boulevard, Washington Boulevard, and Culver Boulevard. This Study Area was established in consultation with CCPWD.

A total of four intersections and two Project driveways, listed in Table 1, were identified for detailed analysis during the MOU process. The existing lane configurations at the analyzed intersections are provided in Figure 4.

The list of study intersections was reviewed and approved by the City.

EXISTING TRANSPORTATION CONDITIONS

Existing Street System

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

Street classifications for City roadways are designated in the City's *Culver City General Plan Mobility Element* (effective October 9, 2024) (Mobility Element). The Mobility Element defines specific street standards in an effort to effectively link and serve local and regional transportation systems. Per the Mobility Element, street classifications are defined as follows:

- Freeways are specialized arterials with limited access and are grade-separated from the City's street system. Their primary function is to carry large volumes of traffic at high speed throughout the region.
- Primary Arterials are major cross-town thoroughfares with desired right-of-way (ROW) widths of 95 feet or more. Traffic flow on Primary Arterials is characterized as high volume and fast-moving. Direct access onto Primary Arterials from private driveways should be limited or prohibited. Where private driveways are prohibited, Primary Arterials are designed as controlled access streets.
- Secondary Arterials provide links between Collectors and Primary Arterials with desired ROW widths of 80 to 94 feet.
- Major Collectors provide a means for the movement of traffic from Local Streets to larger streets with desired ROW widths between 60 to 79 feet.
- Minor Collectors are generally located within residential neighborhoods and provide direct routes between Local Streets and the adjacent arterials with desired ROW widths of 60 feet or less.
- Local Streets provide access for vehicles to travel between private parking and driveways to larger, non-Local Streets. Generally, Local Streets do not exceed 60 feet of ROW widths and are mostly in residential neighborhoods.

The Mobility Element defines design characteristics, functional uses, and implementation for roadway segments and/or corridors that support the City's goals and objectives. Special

Designation functional classifications for City roadways are also designated in the Mobility Element are defined as follows:

- Truck Routes are currently a Special Designation that support the movement of goods and freight on commercial vehicles (over 6,000 pounds - unladen) considered too heavy for many City streets.

- Active Transportation Corridors reallocate ROW, including converting or reconfiguring parking or travel lanes, to support safe, active transportation trips. Corridor improvements may include curb management solutions, passenger wayfinding and intelligent transportation systems (ITS) signalization, traffic calming, and pedestrian and bicycle facilities.

- Transit Priority Corridors reallocate ROW for specific transit and/or alternative modes. Corridor improvements may include transit priority lanes/signals, passenger wayfinding and ITS, and enhanced transit stops or mobility hubs.

- Car-Free Zones (Vacated Streets) will be assigned to roadways (or roadway segments) and reallocate and/or repurpose ROW both inside and outside of the curb, for improvements that could include creation of public spaces, economic development initiatives, complete streets implementation, and pedestrian and bicycle safety measures.

Primary regional access to the Project Site is provided by I-405. In proximity to the Project Site, the Study Area is served by arterial streets such as Venice Boulevard, Washington Boulevard, and Culver Boulevard. The following is a brief description of the roadways in the Study Area, including their classifications under the Mobility Element:

Freeways

- I-405 – I-405 generally runs in the northwest-southeast direction and is located 0.40 miles southwest of the Project Site. In the vicinity of the Project Site, I-405 provides seven travel lanes in each direction. Access to and from I-405 is available via interchanges at Sepulveda Boulevard.

Roadways

- Venice Boulevard – Venice Boulevard is a designated Primary Arterial and Truck Route that runs in the northeast to southwest direction and is located generally north of the Project Site. It provides four travel lanes, two in each direction, with two bus only lanes, one in each direction. There is a center landscaped median. Non-metered on-street parking is generally provided on both sides of the street. Travel lanes are typically 10 feet wide, and the total paved width is generally 130-150 feet.

- Washington Boulevard – Washington Boulevard is a designated Primary Arterial and Transit Priority Corridor that runs in the northeast to southwest direction and is located adjacent to the northwest boundary of the Project Site. It provides four travel lanes, two in each direction, with a two-way left-turn lane median. Non-metered on-street parking is generally provided on both sides of the street. Travel lanes are typically 11 feet wide, and the total paved width is generally 100 feet.

- Washington Place – Washington Place is a designated Secondary Arterial that runs in the northeast to southwest direction and is located generally west of the Project Site. It provides four travel lanes, two in each direction, with a two-way left-turn lane median. Non-metered on-street parking is generally provided on both sides of the street. Travel lanes are typically 10 feet wide, and the total paved width is generally 100 feet.

- Culver Boulevard – Culver Boulevard is a designated Primary Arterial that runs in the northeast to southwest direction and is located generally south of the Project Site. It provides a two lane, 2-way access road, a 2-way Class I bike lane within a median, and an additional street with four travel lanes, two in each direction, with its own median. Limited non-metered on-street parking is provided on the south side of the street, and on both sides of the access road. Travel lanes are typically 11 feet wide, and the total paved width is generally 160-180 feet.

- Tilden Avenue – Tilden Avenue is a designated Local Street that runs in the northwest to southeast direction and is located generally west of the Project Site. It provides two travel lanes, one in each direction. Non-metered on-street parking is generally provided on both sides of the street. Travel lanes are typically 12 feet wide, and the total paved width is generally 50 feet.

- Girard Avenue – Girard Avenue is a designated Minor Collector that runs in the northwest to southeast direction and is located generally north of the Project Site. It provides two travel lanes, one in each direction. Non-metered on-street parking is generally provided on both sides of the street. Travel lanes are typically 12 feet wide, and the total paved width is generally 50 feet.

- Elenda Street – Elenda Street is a designated Major Collector and Active Transportation Corridor that runs in the northwest to southeast direction and is located adjacent to the eastern boundary of the Project Site. It provides two travel lanes, one in each direction, and a two-way left-turn lane median. Non-metered on-street parking is generally provided on the west side of the street. Travel lanes are typically 10 feet wide, and the total paved width is generally 80 feet.

- Prospect Avenue – Prospect Avenue is a designated Local Street that runs in the northwest to southeast direction and is located generally west of the Project Site. It provides two travel lanes, one in each direction. Non-metered on-street parking is generally provided on both sides of the street. Travel lanes are typically 10 feet wide, and the total paved width is generally 40 feet.

The existing intersection mobility facilities at the study intersections are shown in Figure 5.

Existing Transit System

Figure 6 illustrates the existing public transit service in the Study Area, which is served by bus lines operated by Metro, the Los Angeles Department of Transportation (LADOT), and Culver CityBus.

Table 2 summarizes the existing transit service 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. The average headways during the peak hour were estimated using detailed trip data from Year 2025 provided by Culver City Bus, LADOT, and Metro.

Existing Bicycle System

As shown in *Culver City Bicycle & Pedestrian Action Plan* (CCPWD, June 2020), the existing bicycle system in the Study Area consists of a variety of bicycle facilities.

Culver City Bicycle & Pedestrian Action Plan is comprised of a network of streets that prioritize bicyclists and provide Class I Shared-Use Paths, Class II Bicycle Lanes, Class III Bicycle Routes and Bike Boulevards, which provide sharrows and signage, and Class IV Separated Bikeways.

Within the Study Area, there are Class II bicycle lanes on Bentley Avenue between Venice Boulevard and Washington Place, Class III bicycle lanes on Girard Ave Between Venice Boulevard and Washington Boulevard and Elenda Street south of Culver Boulevard, and Class IV bike lanes are provided on Venice Boulevard and Elenda Street between Washington Boulevard and Culver Boulevard. Additionally, a Class I Shared Use Path is provided along Culver Boulevard south of Elenda Street. Bicycle facilities at the study intersections are shown in Figure 5.

Existing Pedestrian Facilities

Per *Culver City Bicycle & Pedestrian Action Plan*, most streets in the City have existing sidewalks in good condition. Marked crosswalks, including transverse lines and continental striping, are provided at most major intersections throughout the City.

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 Walk Score and assigned a score out of 100 points. With access to numerous commercial businesses, residences, and cultural centers, the walkability of the Project Site is approximately 92 points[1]. The sidewalks that serve as routes to the Project Site provide proper connectivity and adequate widths for a comfortable and safe pedestrian environment. Adjacent to the Project site and along Washington Boulevard there is an existing network where complete sidewalks are provided with trees and intermittent landscaping. Pedestrian crossings are provided at signalized intersections within the Study Area. Further, a High-Intensity Activated Crosswalk (HAWK) beacon is installed on Washington Boulevard at the western leg of Huron Street, ensuring a safe and controlled crossing for pedestrians. Additional pedestrian facilities, such as pedestrian phasing, curb ramps, and crosswalk striping, at the study intersections are shown in Figure 5.

Vision Zero

The City adopted the Vision Zero initiative in 2016. Vision Zero is a traffic safety policy that promotes strategies, including modifying the design of streets, to eliminate collisions that result in severe injury or death and increase safety for the most vulnerable road users. Vision Zero has identified the High Injury Network (HIN), a network of streets based on the collision data from *Culver City Bicycle & Pedestrian Action Plan* between Years 2014-2019, where strategic investments would have the biggest impact in reducing death and severe injury. Within the Study Area, Washington Place, Washington Boulevard, Sepulveda Boulevard, Venice Boulevard, and Culver Boulevard are identified as part of the HIN.

Safe Routes to School

The City identifies Safe Routes to School (SRTS) Improvement Zones where, in addition to prioritizing traffic calming and other active transportation-focused projects, the City recommends improved pedestrian network connections to local schools. The SRTS Improvement Zones have

[1] Walk Score (www.walkscore.com) rates the Project Site (10950 Washington Boulevard) with a score of 92 of 100 possible points (scores assessed on July 19, 2024). 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.

intersection and corridor safety projects within a 0.25-mile radius of several K-12 schools. Safety projects consist of new or improved crosswalks, traffic signal improvements, traffic calming elements such as speed humps and roundabouts, curb ramps and extensions, updated signage and pavement markings, and sidewalk improvements. Within the Study Area, the Project Site, as well as Venice Boulevard, Washington Boulevard, Girard Avenue, Elenda Street, Culver Boulevard, Prospect Avenue, and Tilden Avenue, are within SRTS Improvement Zones.

Existing Traffic Volumes

Intersection turning movement counts for typical weekday morning (7:00 AM to 9:00 AM) and afternoon (4:00 PM to 6:00 PM) peak periods were collected in June 2024 and February 2025 while schools were in session and weather conditions were clear. Volumes from 2024 were increased by 1% to reflect 2025 conditions. The Existing Conditions (Year 2025) intersection peak hour traffic volumes are illustrated in Figure 7. Traffic count worksheets are provided in Appendix B.

FUTURE AND CUMULATIVE TRANSPORTATION CONDITIONS

The forecast for Future without Project Conditions (Year 2030) and Cumulative without Project Conditions (Year 2045) was prepared in accordance with procedures outlined in the Guidelines. Specifically, there are two requirements for developing the future traffic volume forecast: (1) projected future volumes and (2) ongoing or entitled development projects near or within the Study Area (Related Projects).

The ambient growth factor discussed below likely includes some traffic increases resulting from the Related Projects. Therefore, through some inherent double-counting of vehicles, the traffic analysis provides a conservative estimate of Future without Project Conditions traffic volumes.

The forecast base year traffic volumes, therefore, include ambient growth, which reflects increases in traffic due to regional growth and development outside the Study Area as well as the Related Projects.

Ambient Traffic Growth

Existing traffic levels have historically been projected to increase as a result of regional growth and development. To provide a conservative estimate of future background conditions, this analysis used the 1% annual growth precedent as approved in the MOU to simulate anticipated buildout for both Year 2030 and Year 2045 traffic volumes. The total adjustment applied over the five-year and 20-year periods were 5% and 20%, respectively. These growth factors account for increases in traffic due to potential projects not yet proposed and projects located outside the Study Area.

Related Projects

In accordance with the Guidelines, this study also considered the effects of the Project in relation to the Related Projects. Including this analysis step, the potential impact of the Project was evaluated within the context of past, present, and probable future developments capable of producing cumulative impacts. The list of Related Projects is based on information provided by both the City and the City of Los Angeles in January 2024, as well as recent studies of development projects in the area. Related Projects within 0.50 miles of the Project Site were considered in the analysis and represent development projects most likely to add traffic to the study intersections. The Related Projects are detailed in Table 3 and their approximate locations are shown in Figure 8.

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 assessment and conservatively assumed to be completed by the Project buildout year of 2030 and General Plan horizon year of 2045. 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 area that would likely occur prior to Project buildout years. With the addition of the 1% per year ambient growth factor previously discussed, the Future without Project Year 2030 and Cumulative without Project Year 2045 Conditions are even more conservative.

Using these conservative assumptions, the potential traffic operations of the Project were evaluated. The development of estimated traffic volumes added to the Study Intersections 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 calculated using a combination of previous study findings and the trip generation rates contained in *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2030), *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021) or were provided by the respective jurisdiction. The Related Projects trip generation estimates summarized in Table 3 are 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 (e.g., transit, bus, bicycling, walking, carpool, etc.). Further, they do not account for the internal capture trips within a multi-use development or for the interaction of trips between multiple Related Projects, 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 factors include the type and density of the proposed land uses, the geographic distribution of 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 were considered along with logical travel routes through the street system to develop a reasonable pattern of trip distribution.

Traffic Assignment. The trip generation estimates for the Related Projects were assigned to the local street system using the trip distribution pattern described above. Figure 9 shows the peak hour traffic volumes associated with these Related Projects at the Study Intersections.

Future without Project Traffic Volumes

The Related Projects volumes were then added to the existing traffic volumes after adjustment for ambient growth through the projected Project completion year of 2030. As discussed above, this is a conservative approach as many of the Related Projects may be reflected in the ambient growth rate. These volumes represent the Future without Project Conditions (i.e., ambient traffic growth and Related Project traffic added to existing traffic volumes) for Year 2030 at the study intersections and are shown in Figure 10.

Cumulative without Project Traffic Volumes

Similar to the Future without Project Conditions traffic volumes, the Related Projects volumes were added to the existing traffic volumes after adjustment for ambient growth through the projected General Plan horizon year of 2045. These volumes represent the Cumulative without Project Conditions (Year 2045) at the study intersections and are shown in Figure 11.

Future Improvements

The analysis of Future Conditions considered transportation improvements that are funded and expected to be implemented prior to the buildout of the Project. These improvements could result in changes to the physical configuration at the study intersections. Other proposed improvement projects that are not funded and traffic / trip reduction strategies such as Transportation Demand Management (TDM) programs for individual buildings and developments were conservatively omitted from the Future and Cumulative Conditions analyses. The future improvements proposed as part of the Mobility Element are illustrated in Figure 12. A summary of additional future improvements is provided below.

Bicycle and Pedestrian Action Plan. *Culver City Bicycle & Pedestrian Action Plan* identifies key recommended improvements for corridors throughout the City. The goal of this plan is to improve active forms of transportation by providing accessible, safe, and comfortable environments for all road users. The following summarizes the recommended network upgrades, depicted in Figure 12, planned on corridors within 0.25 miles of the Project Site:

- Recommended Bicycle Facilities: New Class II bikeways have been recommended for installation on Washington Boulevard, Sepulveda Boulevard, and Harter Avenue.
- Recommended Pedestrian Facilities: No further new beacons/signals have been recommended for installation within the Project Area.

- Opportunity Corridors: Three Opportunity Corridors consisting of "planning-level projects" for additional improvements for bicycling and walking included the Downtown Core, Overland Avenue, and Farragut Drive. None of these Opportunity Corridors are located within 0.25 miles of the Project Site.

The specific timeline for implementation of these recommendations has not been identified; therefore, no changes to intersection lane configurations were made as a result of *Culver City Bicycle & Pedestrian Action Plan*.

Mobility Hubs. The City identifies key intersections where mobility hubs could be implemented into the broader transportation system to maximize the benefits and mitigate negative externalities of new transit services. Per the Mobility Element, "mobility hubs are places designed to connect people with multiple modes of transportation and maximize first- and last-mile connections to high-quality transit service. Mobility hubs integrate different modes and can include a variety of features, like bus layover zones, shelters, real time information, bikeshare stations, carshare facilities, wayfinding, taxi stands, public Wi-Fi service, bicycle parking and lockers, micromobility services, retail, and open space." The study intersection of Washington Boulevard & Elenda Street has been identified for implementation of a mobility hub. The specific timeline for implementation of mobility hubs has not been identified; nevertheless, the Project would not preclude future implementation at this intersection.

STUDY AREA AND ANALYZED INTERSECTIONS

FIGURE 3

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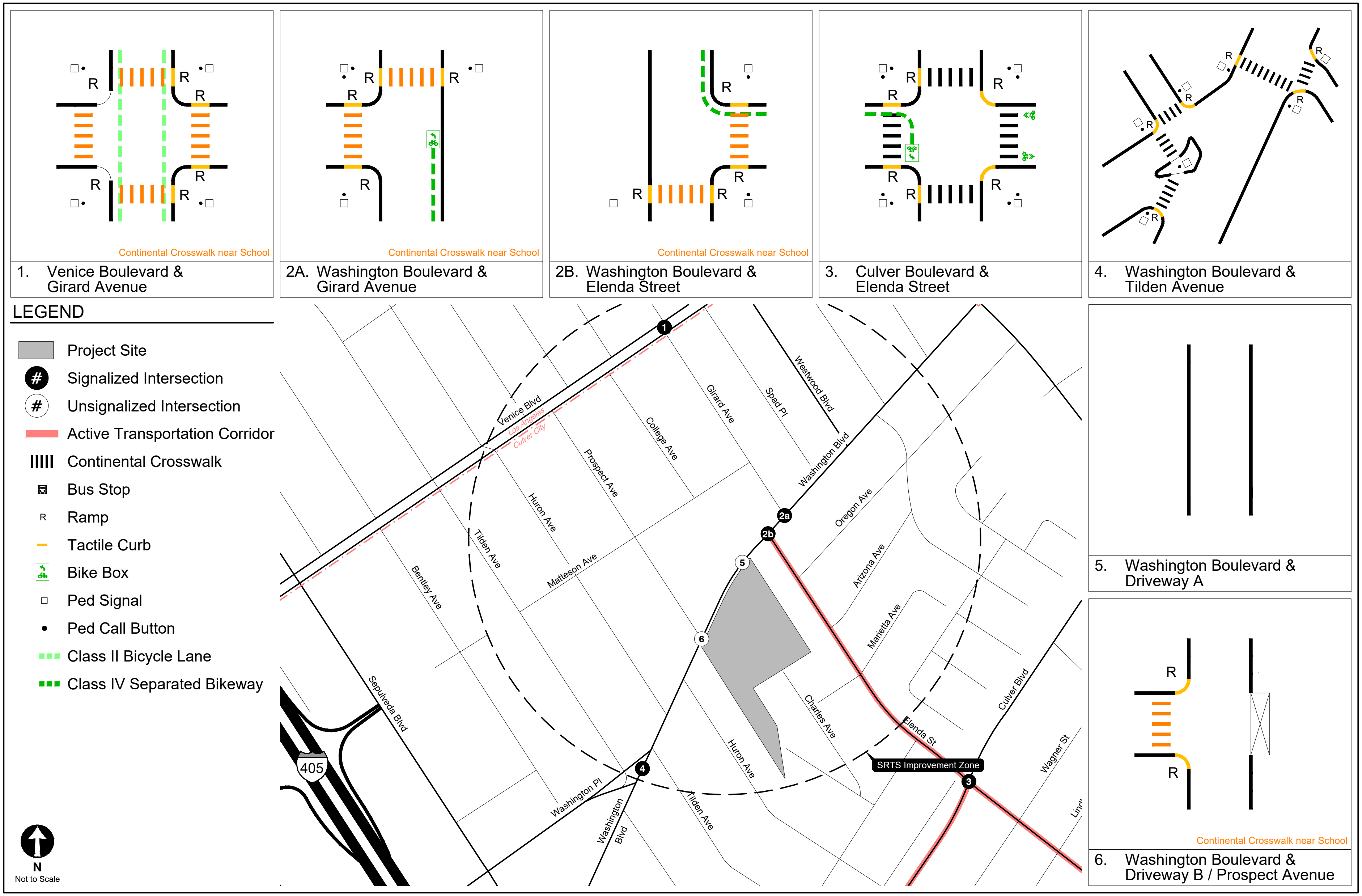
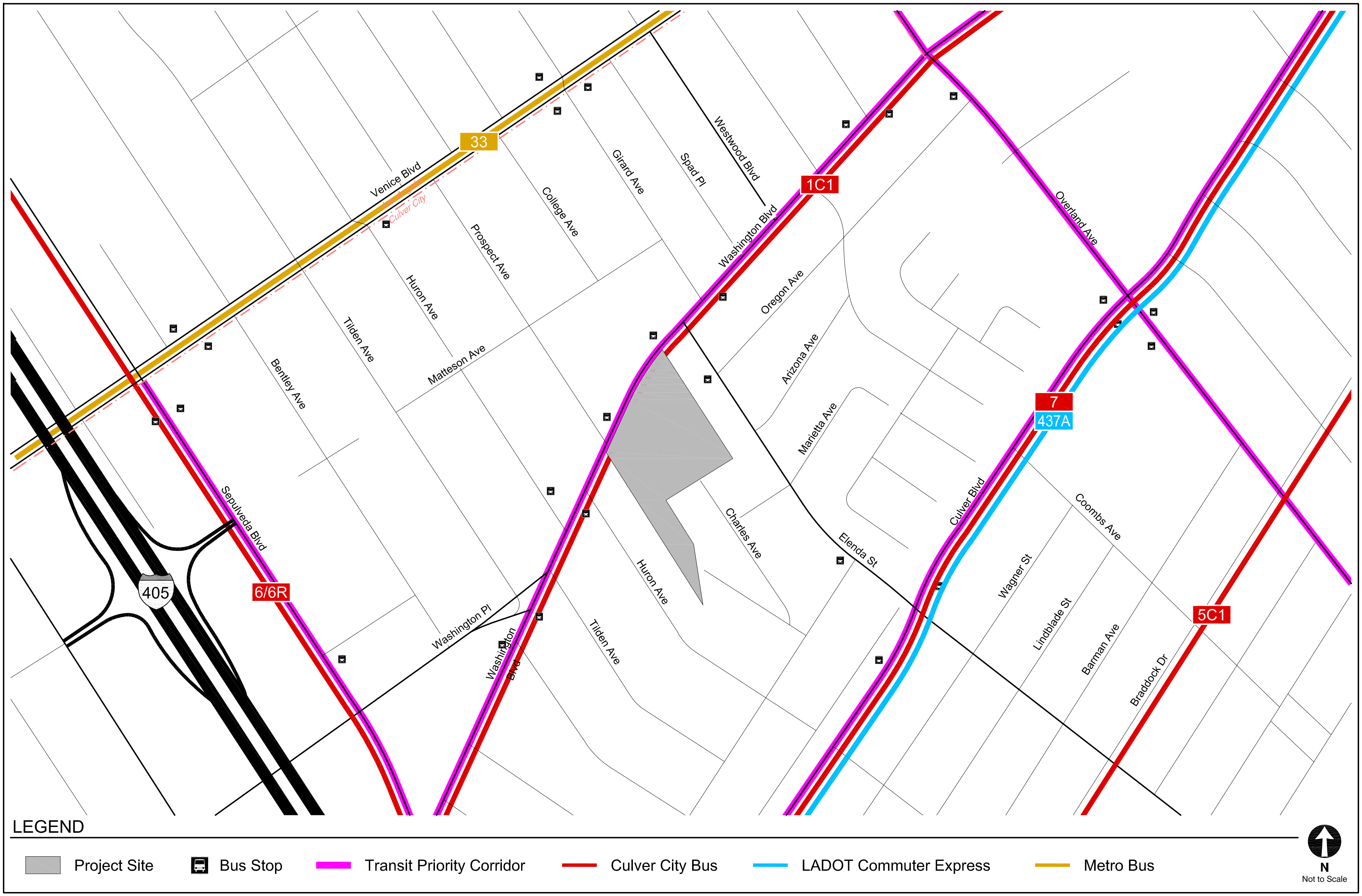
EXISTING INTERSECTION LANE CONFIGURATIONS

FIGURE 4



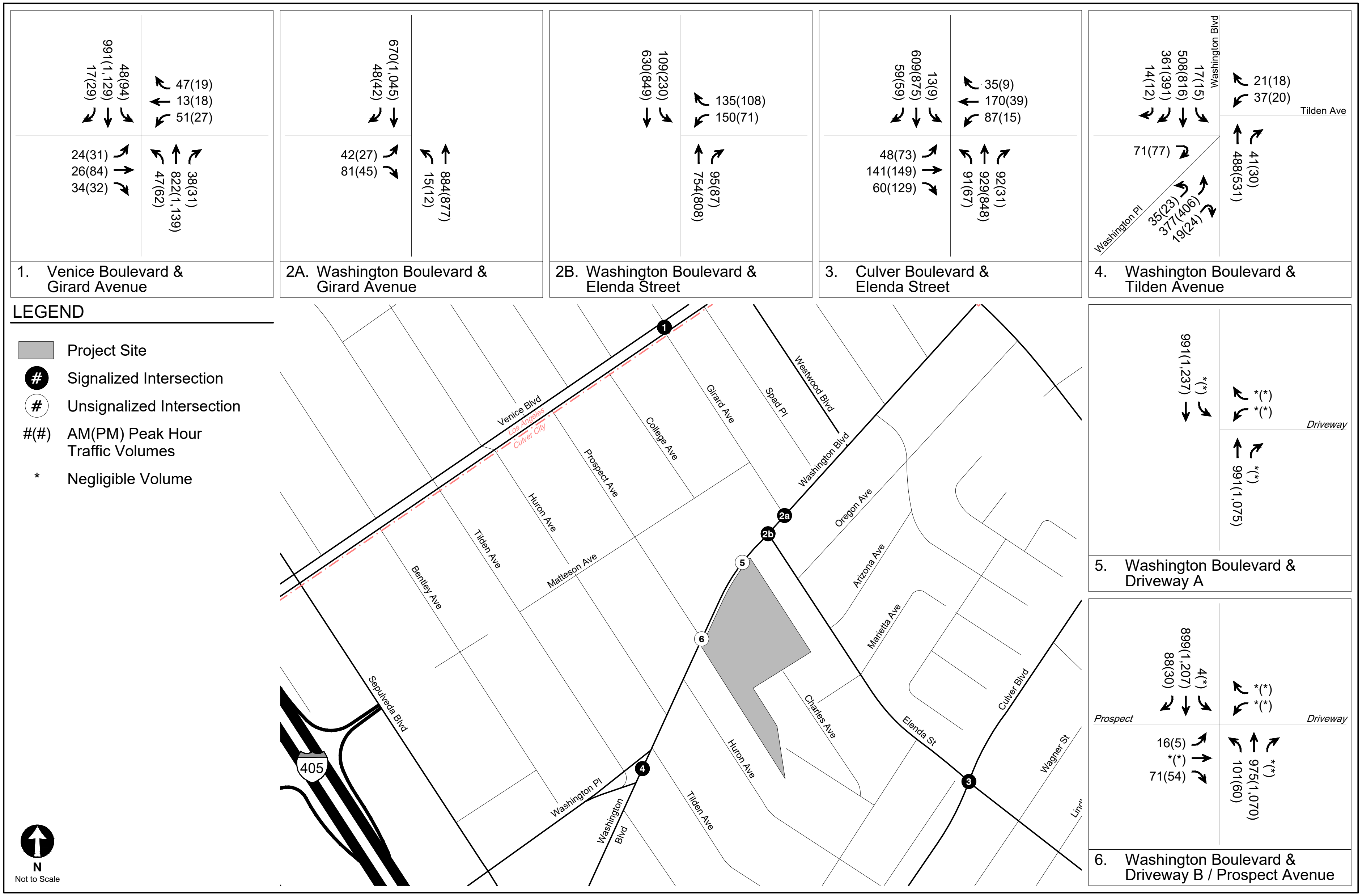
EXISTING INTERSECTION MOBILITY FACILITIES

FIGURE 5



EXISTING TRANSIT SERVICE

FIGURE 6



EXISTING CONDITIONS (YEAR 2025) PEAK HOUR TRAFFIC VOLUMES	FIGURE 7

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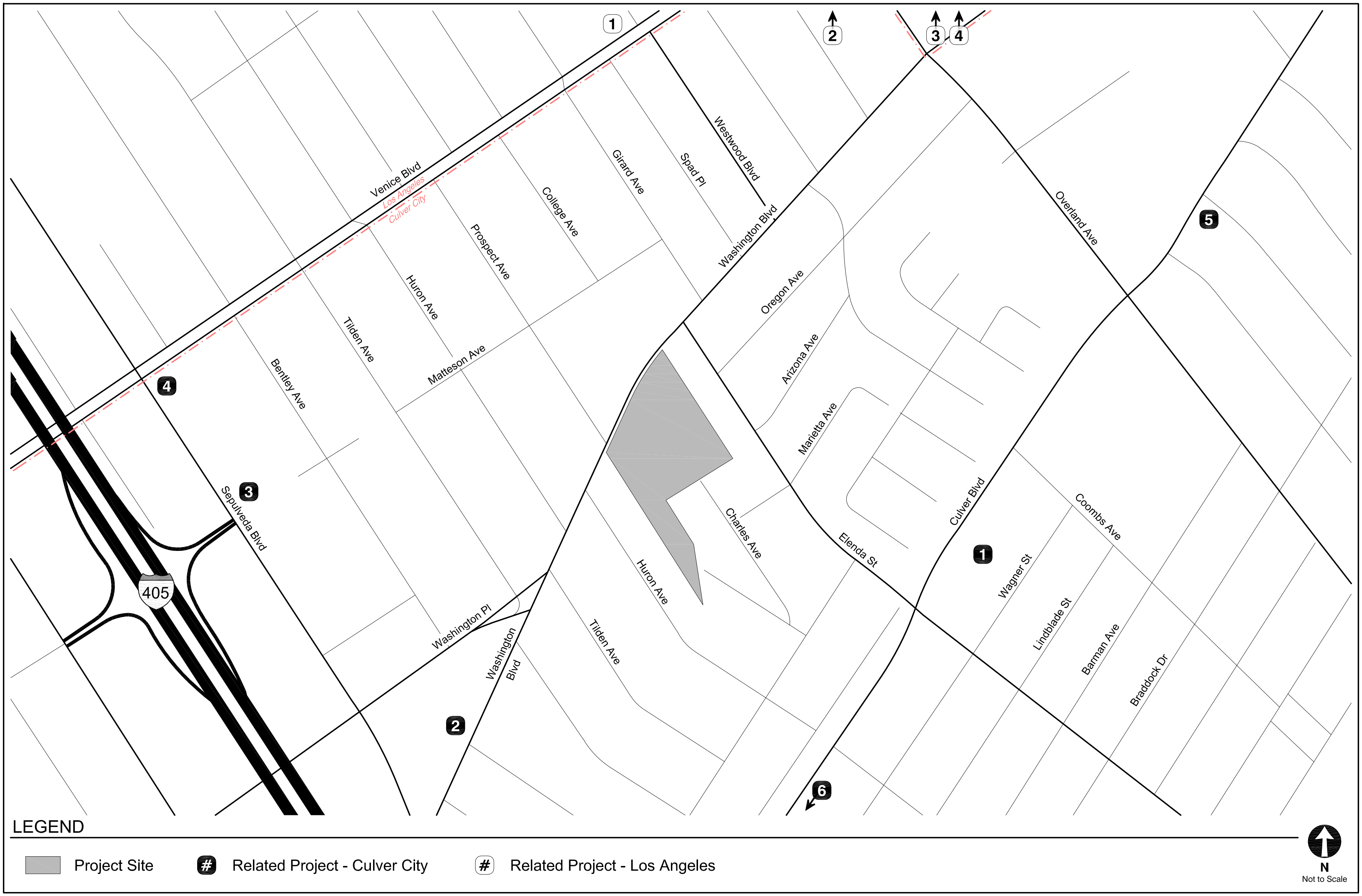
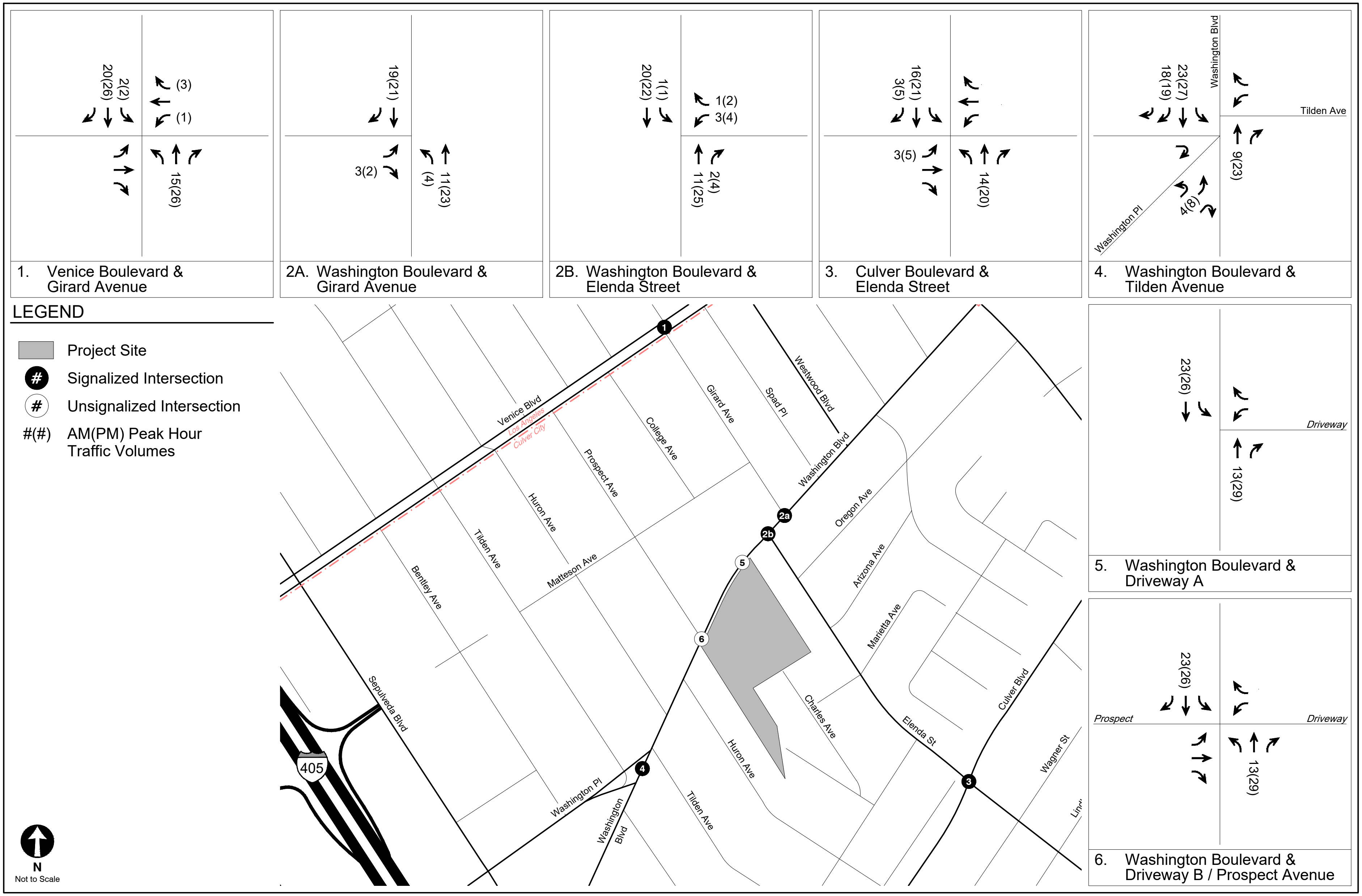


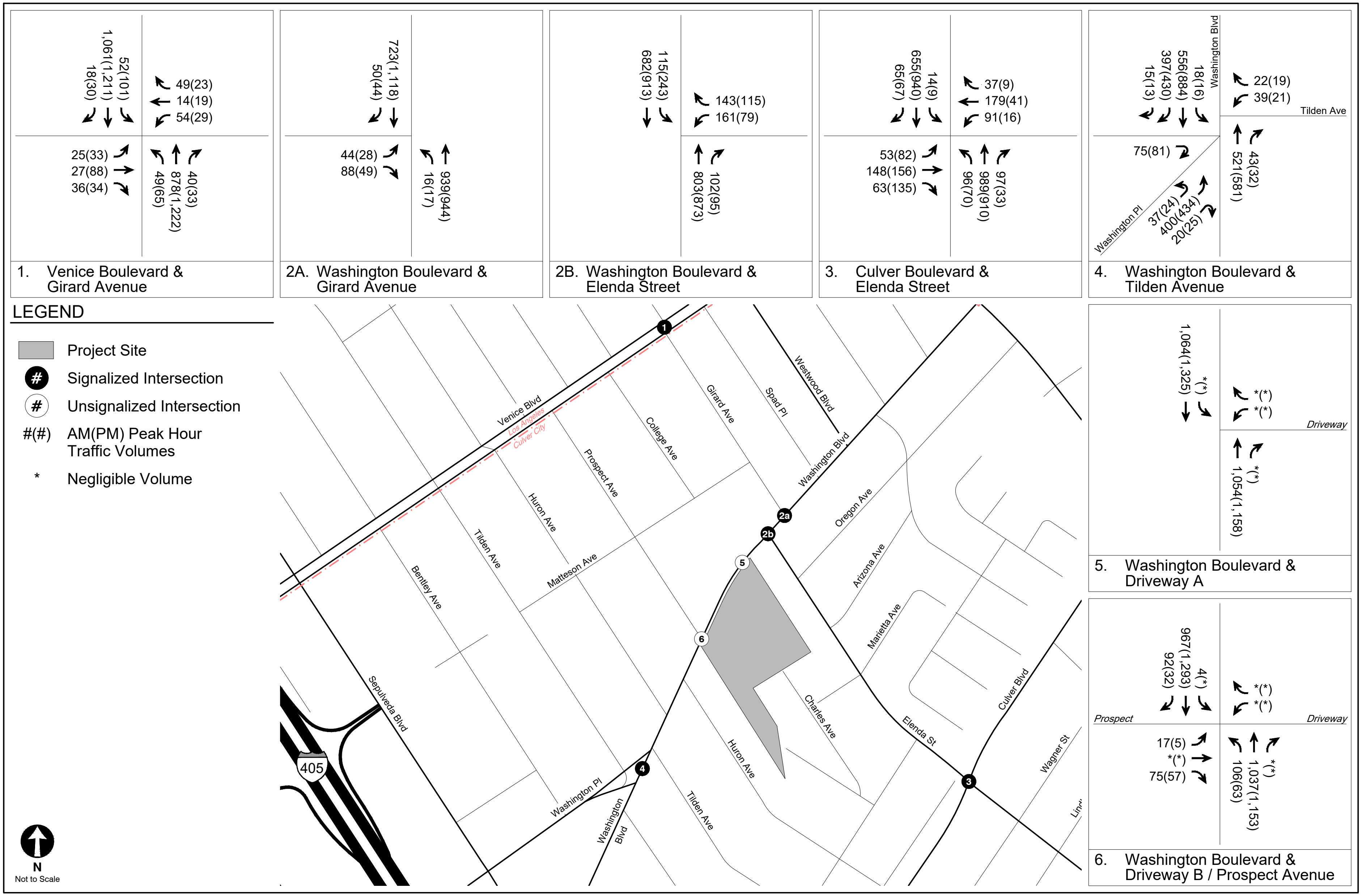
LOCATIONS OF RELATED PROJECTS

FIGURE 8



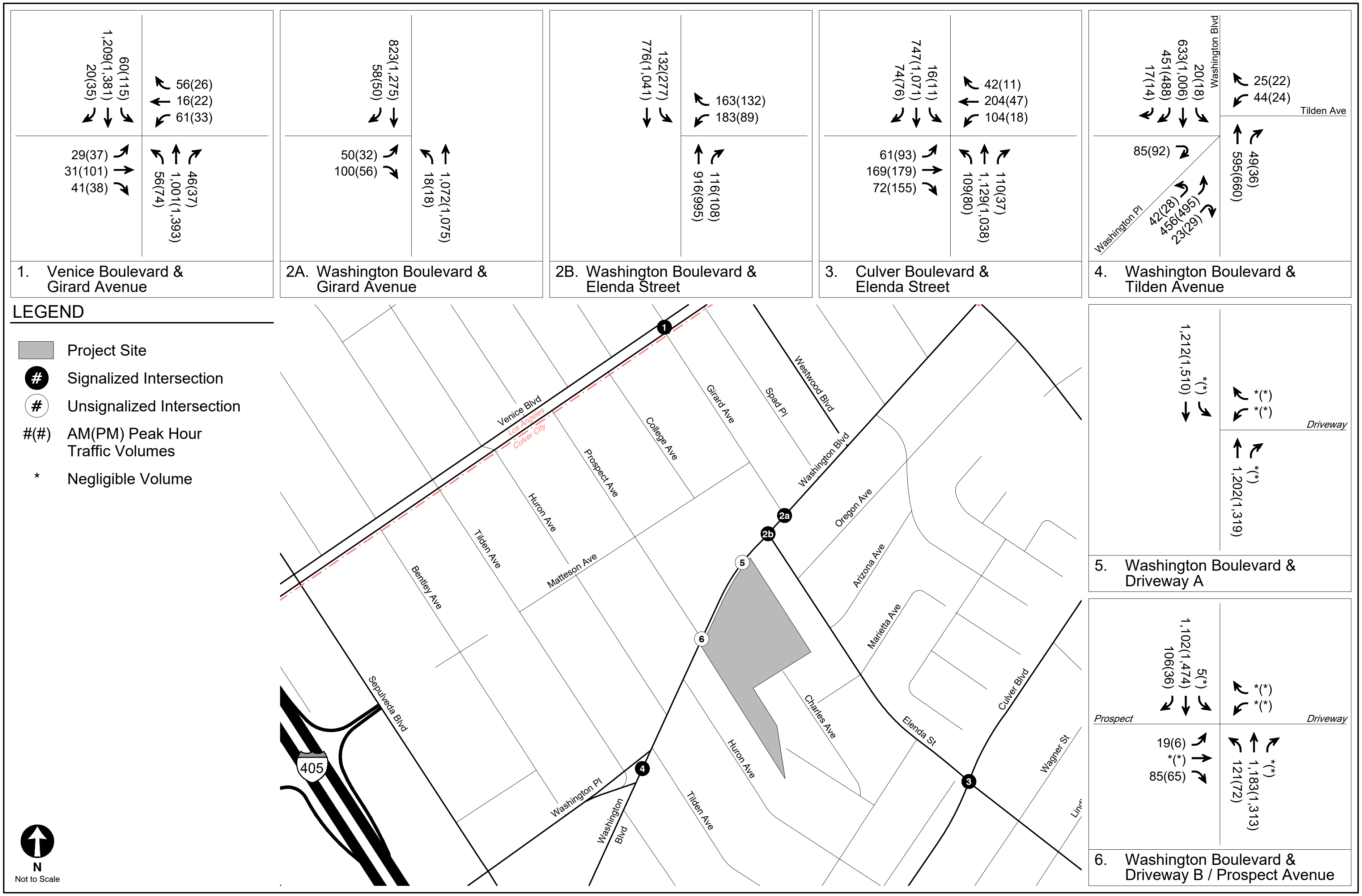
RELATED PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE 9



FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2030)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 10



CUMULATIVE WITHOUT PROJECT CONDITIONS (YEAR 2045)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 11

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LEGEND

Existing

Future / Active Projects

Project Site

Bus Stop

Transit Priority Corridor

Active Transportation Corridor

Mobility Hub

Class I Bike Path

Class II Bicycle Lane

Pedestrian Crossing

Class III Bicycle Route

Class IV Separated Bikeway

Pedestrian Crossing near School

Class II Bicycle Lane

Signalized Intersection Safety Improvements

Unsignalized Intersection Safety Improvements

N
Not to Scale

PROPOSED TRANSPORTATION CIRCULATION SYSTEM

FIGURE 12

TABLE 1
STUDY INTERSECTIONS

No.	North/South Street	East/West Street	Existing Traffic Control
1.	Girard Avenue	Venice Boulevard	Signalized
2A.	Washington Boulevard	Girard Avenue	Signalized
2B.	Washington Boulevard	Elenda Street	Signalized
3.	Culver Boulevard	Elenda Street	Signalized
4A.	Washington Boulevard	Tilden Avenue	Signalized
4B.	Washington Boulevard	Washington Place	Signalized
5.	Washington Boulevard	Driveway A	Unsignalized
6.	Washington Boulevard	Driveway B / Prospect Avenue	Unsignalized

TABLE 2
EXISTING TRANSIT SERVICE

Provider, Route, and Service Area		Service Type	Hours of Operation [a]	Average Headway (minutes)			
				Morning Peak Period		Afternoon Peak Period	
Culver City Bus				**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
1/1C1	West LA Transit Center - Culver City City Hall - Venice	Local	6:00 AM - 11:00 PM	23	18	17	17
5C1 [b]	Braddock Drive - Arts District/Helms	Local	6:55 AM - 3:30 PM	50	50	50	50
6/6R	Westwood - UCLA - Aviation Station via Sepulveda Bl	Local	5:00 AM - 12:00 AM	8	11	10	9
7	Downtown Culver City - Marina del Rey via Culver Bl	Local	7:00 AM - 7:00 PM	60	60	48	48
LADOT - Commuter Express				**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
437A	Commuter Express DTLA to Culver City/Marina Del Rey/Venice	Local	6:00 A.M. - 7:30 P.M.	30	30	30	30
Metro Bus Service				**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
33	DTLA - Santa Monica via Venice Bl	Local	6:00 A.M. - 9:00 P.M.	8	8	10	10

Notes:
Metro - Los Angeles County Metropolitan Transportation Authority
LADOT: Los Angeles Department of Transportation
AM Peak from 6 AM - 9 AM
PM Peak from 3 PM - 7 PM
[a] Service routes and frequencies are current as of the time of publishing this Assessment, including recent changes based on the Metro Next Gen Bus Plan.
[b] This service only operates on weekdays and when school is in session.

TABLE 3
RELATED PROJECTS LIST

No.	Project [a]	Address	Use	Trip Generation						
				Daily	Morning Peak Hour			Afternoon Peak Hour		
					In	Out	Total	In	Out	Total
City of Culver City										
1. [b]	Wende Creative Community Center	10858-10860 Culver Boulevard	7,022 sf community center	202	9	4	13	8	10	18
2. [b]	New Assisted Living Facility	11141 Washington Boulevard	117-room assisted living	259	5	4	9	10	11	21
3. [b]	New Hotel	3868-3900 Sepulveda Boulevard	118 hotel rooms and 2,000 sf commercial	1,052	33	26	59	43	40	83
4. [c]	TGS CC Ventures	3800 Sepulveda Boulevard	3,824 sf dispensary	817	19	15	34	36	35	71
5. [b]	10510 Culver Boulevard	10510 Culver Boulevard	58,108 sf office	630	77	11	88	14	70	84
6. [b]	4319-4321 Sepulveda Boulevard	4319-4321 Sepulveda Boulevard	18 apartment units and 3,205 sf commercial	257	7	8	15	15	13	28
City of Los Angeles										
1.	New 6 Story Mixed-Use	10801 W. Venice Boulevard	85 apartment units and ground-floor retail	430	(5)	25	20	41	18	59
2. [b]	10626 W. Venice Boulevard	10626 W. Venice Boulevard	109 apartment units (11 affordable units) and 3,318 sf commercial	679	14	34	48	37	28	65
3. [b]	Washington-Motor Mixed-Use	10410-10417 W. Washington Boulevard	112 apartment units (15 affordable units) and 2,000 sf commercial	621	12	34	46	34	24	58
4.	Mixed-Use (Residential & Retail)	10375 W. Washington Boulevard	108 condominium units and 3,600 sf retail	579	(3)	35	32	31	11	42

Notes:
[a] Related Project information provided by the City of Culver City and City of Los Angeles in January 2024. Related Projects include developments within approximately 0.5 miles of the Project Site.
[b] Trip Generation estimates developed internally using *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021).
[c] Trip Generation estimates developed internally using *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2017).

Chapter 3
Project Traffic

Trip generation estimates, trip distribution patterns, and trip assignments were prepared for the Project. These components form the basis of the Project's non-CEQA traffic analysis.

PROJECT TRIP GENERATION

The number of vehicle trips expected to be generated by the Project was estimated using rates published in *Trip Generation Manual, 11th Edition*. These rates are based on surveys of similar land uses at sites around the country and are utilized to calculate the number of vehicle trips traveling to and from the Project Site during the morning and afternoon peak hours relative to the size of development.

Appropriate trip reductions were applied in consultation with CCPWD to account for public transit usage, internal capture, and pass-by trips. The Project is located within 0.50 miles walking distance of several bus stops, including 0.10 miles walking distance of the Washing Boulevard / Elenda Street, Washington Boulevard / Prospect Avenue, and Washing Boulevard / Huron Avenue stops, and near various bicycle facilities. Therefore, in consultation with CCPWD, a 10% transit / walk-in reduction was applied to the trip generation estimates to account for transit usage and walking arrivals from the surrounding neighborhoods and adjacent commercial developments.

The number of trips currently generated by the existing office uses to be removed with development of the Project was also estimated using the rates published in *Trip Generation Manual, 11th Edition*. The existing use trip estimates also account for trip reductions consistent with the Project.

As shown in Table 4, after accounting for the adjustments above and the removal of existing uses, the Project is expected to generate 1,508 daily trips with 46 net new morning peak hour trips

(-102 inbound trips, 148 outbound trips) and 57 net new afternoon peak hour trips (127 inbound trips, 70 outbound trips).

PROJECT TRIP DISTRIBUTION

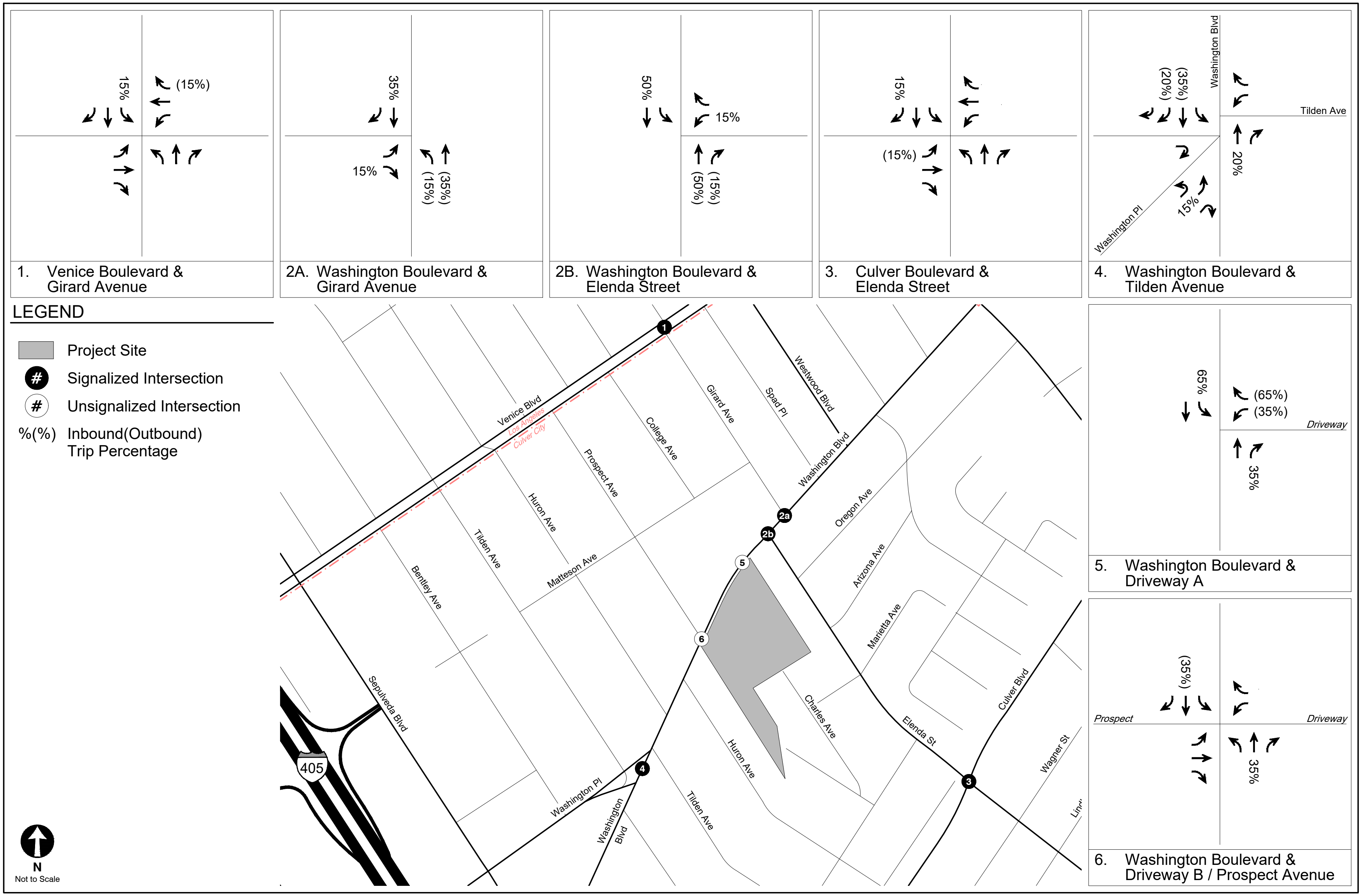
The geographic distribution of trips generated by the Project is dependent on the location of employment, residential, and commercial centers to and from which Project residents, employees, and visitors would be drawn, characteristics of the street system serving the Project Site, the location of the Project driveways, existing traffic patterns, as well as input from CCPWD staff. As detailed in Figure 13, both Project driveways would provide full access operations, including both right- and left-turn ingress and egress along Washington Boulevard.

The intersection-level trip distribution pattern for office and food retail traffic at the study intersections is shown in Figure 13. Generally, the regional pattern is as follows:

- 35% to/from the north
- 15% to/from the east
- 35% to/from the south
- 15% to/from the west

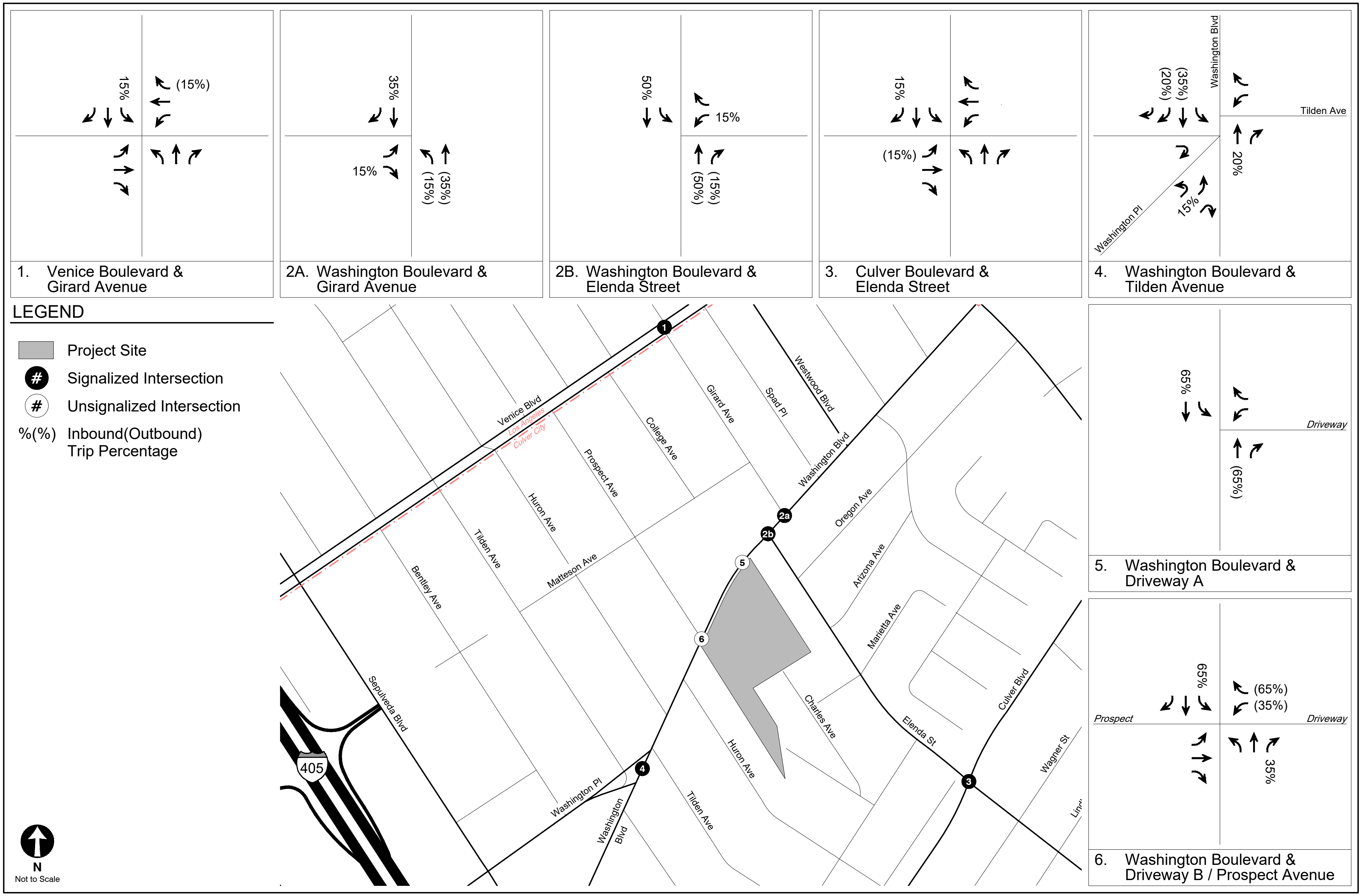
PROJECT TRIP ASSIGNMENT

The Project trip generation estimates summarized in Table 4 and the trip distribution pattern shown in Figure 13 were used to assign the Project-generated traffic through the study intersections. Figure 14 illustrates the Project-only traffic volumes for the Project at the study intersections during typical weekday morning and afternoon peak hours.



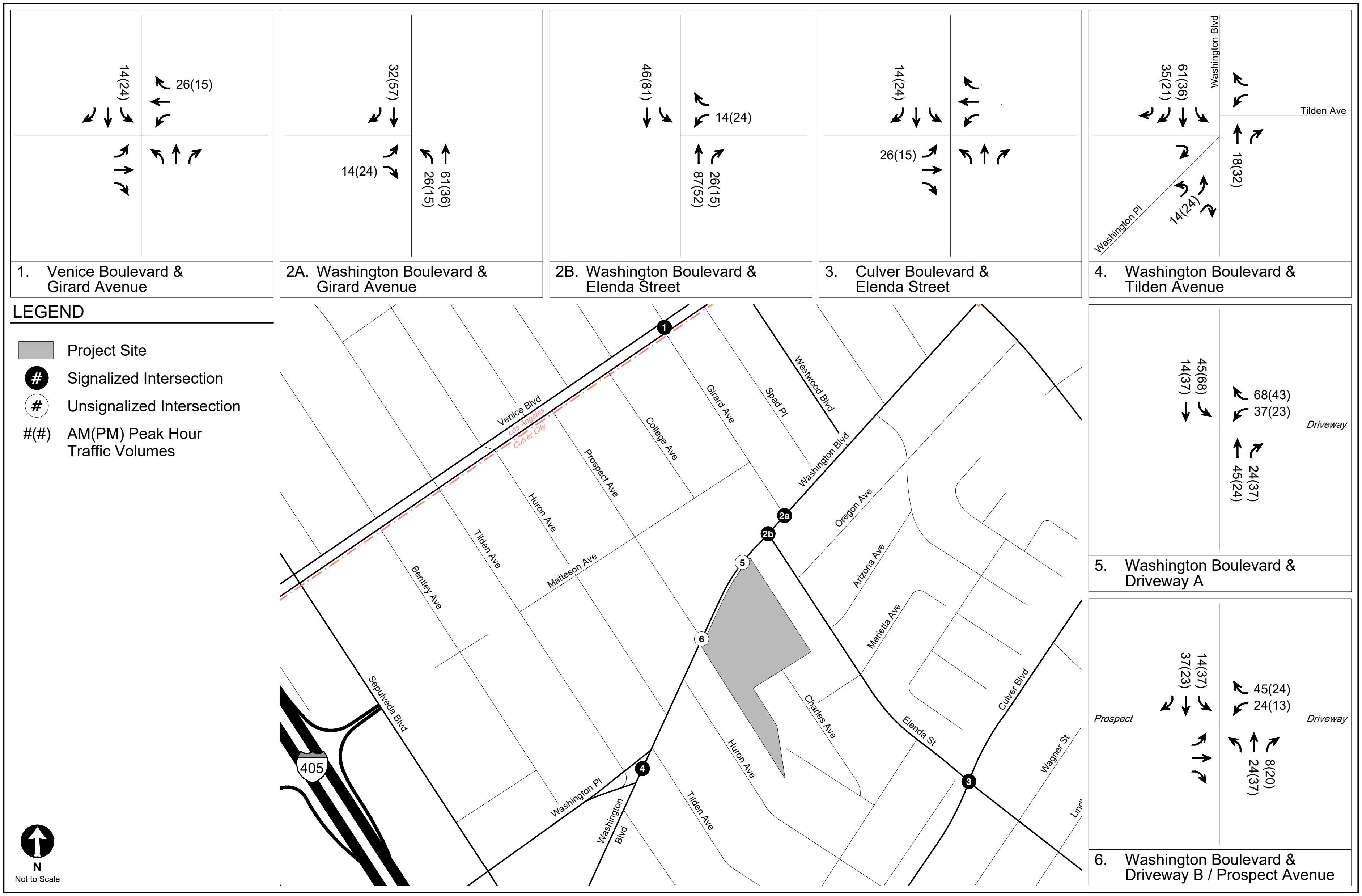
PROJECT TRIP DISTRIBUTION
BUILDING A

FIGURE
13A



PROJECT TRIP DISTRIBUTION
BUILDING B

FIGURE
13B



PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
14

TABLE 4
PROJECT TRIP GENERATION ESTIMATES

Land Use	ITE Land Use	Size	Daily	Morning Peak Hour			Afternoon Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Multifamily Housing (Mid-Rise)	221	per du	4.54	23%	77%	0.37	61%	39%	0.39
Affordable Housing	223	per du	4.81	29%	71%	0.50	59%	41%	0.46
General Office Building	710	per ksf	10.84	88%	12%	1.52	17%	83%	1.44
High-Turnover (Sit-Down) Restaurant	932	per ksf	107.20	55%	45%	9.57	61%	39%	9.05
Proposed Project									
Multifamily Housing (Mid-Rise)	221	429 du	1,948	37	122	159	102	65	167
Transit/Walk-In Reduction - 10% [b]			*(195)*	*(4)*	*(12)*	*(16)*	*(10)*	*(7)*	*(17)*
Affordable Housing	223	79 du	380	12	28	40	21	15	36
Transit/Walk-In Reduction - 10% [b]			*(38)*	*(1)*	*(3)*	*(4)*	*(2)*	*(2)*	*(4)*
High-Turnover (Sit-Down) Restaurant	932	14.087 ksf	1,510	74	61	135	77	50	127
Internal Capture Reduction - 10% [c]			*(151)*	*(7)*	*(6)*	*(13)*	*(8)*	*(5)*	*(13)*
Transit/Walk-In Reduction - 10% [b]			*(136)*	*(7)*	*(6)*	*(13)*	*(7)*	*(5)*	*(12)*
Pass-By Trip Reduction - 20% [d]			*(245)*	*(12)*	*(10)*	*(22)*	*(12)*	*(8)*	*(20)*
Total Project Trips			**3,073**	**92**	**174**	**266**	**161**	**103**	**264**
Existing Land Uses									
General Office Building	710	160.438 ksf	1,739	215	29	244	39	192	231
Transit/Walk-In Reduction - 10% [b]			*(174)*	*(22)*	*(3)*	*(25)*	*(4)*	*(19)*	*(23)*
Total Existing Trips to be Removed			**1,565**	**193**	**26**	**219**	**35**	**173**	**208**
TOTAL - NET NEW PROJECT TRIPS			**1,508**	**(101)**	**148**	**47**	**126**	**(70)**	**56**

Notes:
ksf: 1,000 square feet, du: dwelling unit
[a] Source: AM and PM Peak Hour Rates: *Trip Generation, 11th Edition*, Institute of Transportation Engineers, 2021.
[b] The Project site is located within 0.25 miles of bus stops for several Culver CityBus lines. Therefore, a 10% transit reduction was applied to account for transit usage and walking visitor arrivals.
[c] Internal capture reductions account for person trips made between distinct land uses within a mixed-use development (i.e., between residential and retail).
[d] Pass-by reductions account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

Chapter 4
CEQA Analysis of Transportation Impacts

This chapter presents an analysis of potential CEQA-related transportation impacts. The analysis also discusses the consistency of the Project with adopted City plans and policies and the improvements, if necessary, associated with the results of a vehicle miles traveled (VMT) analysis compliant with State requirements under *State of California Senate Bill 743* (Steinberg, 2013) (SB 743).

METHODOLOGY

SB 743 required the Governor's Office of Planning and Research to change the CEQA Guidelines regarding the analysis of transportation impacts. Under SB 743, the focus of transportation analysis shifted from vehicular delay (level of service [LOS]) to VMT, with the intent of reducing greenhouse gas emissions, creating multimodal networks, and promoting mixed-use developments.

Section 4 of the Guidelines defines the required CEQA methodology of analyzing a project's transportation impacts in accordance with SB 743. Per the Guidelines, the CEQA transportation analysis contains the following thresholds for identifying significant impacts:

- Threshold A: Programs, Plans, Ordinances, and Policies
- Threshold B: VMT – Land Use Projects
- Threshold C: VMT – Transportation Projects
- Threshold D: Geometric Design Hazards

These thresholds were reviewed and analyzed, as detailed in the following Sections 4A-4D.

Section 4A:
Programs, Plans, Ordinances, and Policies

Threshold A states that a project would result in an impact if it conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities.

PROJECT CONSISTENCY WITH PLANS, PROGRAMS, ORDINANCES, AND POLICIES

Table 1 of the Guidelines identifies the City programs, plans, ordinances, and policies relevant in determining project consistency. As discussed below, the Project is consistent and does not conflict with the City's adopted programs, plans, ordinances, and policies listed in Table 1 of the Guidelines; therefore, the Project would not result in a significant impact under Threshold 4A. A detailed discussion of the plans, programs, ordinances, or policies related is provided below.

Traffic Code, Chapter 7.05: Motor Vehicle Air Quality Management

Chapter 7.05 of *Culver City Municipal Code* (CCMC) establishes transportation demand and trip reduction measures to reduce vehicular emissions of new developments in excess of 25,000 sf. The Project is greater than 25,000 sf and would implement a comprehensive TDM program that adheres to the TDM requirements of the CCMC.

Mobility Element

The purpose of the Mobility Element is to establish a policy framework that envisions a 2045 citywide network for all transportation modes by encouraging use of active and shared modes getting to, from, and within Culver City by providing more reliable, safe, affordable, convenient, clean, and connected mobility options for people of all ages and abilities. By enhancing safe and reliable access to schools, parks, community services, neighborhood serving retail, and jobs, the Mobility Element aids in creating a community that is more equitable, inclusive, innovative, and sustainable. As specified in Chapter 2, the Mobility Element identifies existing community mobility-related concerns and opportunities, and establishes goals, policies, and guidance to address these concerns for the future improvement of the transportation network. The Project does not propose to modify or make any modifications to the street classifications or Special Designations, nor would it preclude the City from making improvements to the transportation network.

General Plan 2045 Land Use and Community Design Element

The purpose of the City's *Culver City General Plan Land Use and Community Design Element* (effective October 9, 2024) (Land Use Element) is to define the pattern, scale, organization, and character of development for the city's various land uses, including residential, mixed use, office, retail, light industrial, and civic and public spaces. The Project is located within a Transit-Oriented Community (TOC) because it is located within 0.5 miles of the Sepulveda Boulevard & Venice Boulevard intersection. The Project is also located along Washington Boulevard, a designated Mixed-Use Corridor, defined as a residential, non-residential, and commercial corridor along which the Land Use Element seeks to intensify and mix land uses and to improve pedestrian experiences through parking management strategies, active street frontages, and public realm improvements. The Project proposes a desirable new mixed-use residential and commercial development that will activate the street frontage along Washington Boulevard. Thus, the mixed-use residential and commercial uses of the Project would be compatible with the goals for development along Mixed-Use Corridors designated by the Land Use Element.

Neighborhood Traffic Management Program

The City adopted a series of procedures for the implementation of NTMPs, as defined in the City's *Neighborhood Traffic Management Program (NTMP) Procedures Manual* (November 22, 2004). The Project is not projected to lead to trip diversion along residential Local Streets, nor is the Project projected to add a substantial amount of automobile traffic to congested Arterial Streets that could potentially cause a shift to residential Local Streets. Therefore, the Project would not be required to propose an NTMP for the surrounding residential neighborhoods.

Gateway Neighborhood Design Guidelines

The City's *Multi-Family Neighborhood Residential Design Guidelines – Gateway Neighborhood* (Adopted March 24, 2010) is intended to encourage new residential projects to be compatible with, maintain the integrity of, and preserve the unique character and best features of the Gateway Neighborhood by promoting desirable design qualities, guiding change in ways that are compatible with the existing neighborhood development pattern, and respecting the diversity and vitality of the neighborhood. The Project is not located within the Gateway Neighborhood and, therefore, *Multi-Family Neighborhood Residential Design Guidelines – Gateway Neighborhood* would not apply to the Project.

Gateway Adjacent Neighborhood Design Guidelines

The City's *Multi-Family Neighborhood Residential Design Guidelines – Gateway Adjacent Neighborhood* (July 13, 2011) is intended to encourage new residential projects to be compatible with, maintain the integrity of, and preserve the unique character and best features of the Gateway Adjacent Neighborhood by promoting desirable design qualities, guiding change in ways that are compatible with the existing neighborhood development pattern, and respecting the diversity and vitality of the neighborhood. The Project is not located within the Gateway Adjacent Neighborhood and, therefore, *Multi-Family Neighborhood Residential Design Guidelines – Gateway Adjacent Neighborhood* would not apply to the Project.

Residential Parkway Guidelines

The City's *Culver City Residential Parkway Guidelines* (2016) (Guidelines) inform the general public about parkway regulations and provides guidance on planning, creating, and maintaining a parkway landscape. Property owners are expected to maintain the parkway space adjacent to their properties, with the exception of street trees, which are maintained by the City. Sidewalk access and step-out strips are to be installed and maintained along all residential parkways in the City. These Guidelines are provided to address specifically residential areas. The Project is a residential project; however, it is along a commercial parkway. Therefore, *Culver City Residential*

Parkway Guidelines would not apply to the Project. Nevertheless, the Project will maintain the surrounding landscaping and sidewalks adjacent to the Project Site.

Upper Culver Crest Hillside Design Standards

Culver Crest: Recommendations for R-1 Neighborhood Hillside Development Standards (John Kaliski Architects, PlaceWorks, and RMA GeoScience, January 4, 2017) specifies a zoning code overlay for the Culver Crest residential community to ensure that the unique planning and development concerns of this hillside neighborhood are addressed. The Project is not located within the Upper Culver Crest community and, therefore, *Culver Crest: Recommendations for R-1 Neighborhood Hillside Development Standards* would not apply to the Project.

Short-Range Mobility Plan

Short-Range Mobility Plan (Culver CityBus, FY 2022-2026) provides a strategic blueprint designed to maintain a forward-thinking focus on improved mobility services with a continued dedication to customer service and fiscal responsibility. The plan provides an overview of the City's existing mobility services and policies that further improve mobility in the City, such as transit-oriented development and complete streets projects. Further, the plan proposes a variety of measures to improve mobility services, implement physical changes to transit facilities and roadways, and upgrade existing buses with fully electric vehicles. The Project would not conflict with any of the proposed changes in *Short-Range Mobility Plan*, and improvements made in the plan would likely enhance transit alternatives for residents, employees, and visitors to the site.

Bicycle and Pedestrian Action Plan

Culver City Bicycle & Pedestrian Action Plan seeks to promote a long-term vision for the City that would "ensure comfortable, safe, and attractive places to bike and walk so that these forms of active transportation become first choices for travelling around our city." Adjacent to the Project Site, Washington Boulevard has been identified for bicycle lane improvements. However, the Project would not interfere with any improvements proposed as part of the *Culver City Bicycle &*

Pedestrian Action Plan. Further, the Project would support active modes of transportation by providing bicycle parking and improving the pedestrian facilities adjacent to the Project frontage.

Complete Streets Policy

The City's *City of Culver City Complete Streets Policy* (Adopted January 13, 2020) intends to "promote healthy and sustainable mobility for Culver City residents and visitors by providing safe, convenient, and comfortable access to destinations throughout the City by walking, bicycling, transit, and autos." The policy sets a variety of goals and standards in the application of complete streets principles including improving mobility for all road users, enhancing safety, and creating a standard set of criteria applicable to all city departments and private developers who construct within the public ROW. The Project would incorporate the complete streets principles into the Project design to encourage multi-modal transportation options within the community.

Local Road Safety Plan

The City's *Local Roadway Safety Plan* (November 2021) (LRSP) is a document that enables the City to determine potential traffic safety projects on roadways and intersections within the City. In an effort to eliminate fatal and severe injury collisions, the document provides a comprehensive collisions analysis through the LRSP to identify high-risk corridors and intersections with the highest collision frequency and severity. Of the several high-risk intersections and street segments identified in the plan, Washington Boulevard is located adjacent to the Project Site. However, the Project would utilize one new and one existing driveway on Washington Boulevard that meet the street at a 90-degree angle and have no obstructed sightlines. Thus, the Project would not preclude the City from implementing improvements to eliminate fatal and severe injury collisions as part of the LRSP.

Vision Zero

The City adopted the Vision Zero initiative in 2016 and has incorporated policies and infrastructure improvements into *Culver City Bicycle & Pedestrian Action Plan*. The Project Site is located adjacent to Washington Boulevard, which is identified in the City's HIN. Nevertheless, the Project would not preclude any Vision Zero improvements on this corridor as it is not proposed to be modified by the Project. Thus, the Project does not conflict with Vision Zero.

Section 4B:
VMT Analysis – Land Use Projects

Threshold B of the Guidelines analyzes whether a project causes substantial VMT and is generally applied to land use projects. Specifically, Threshold 4B inquires whether a project would conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)(1), which states that (for land use projects) "vehicle miles travelled exceeding an applicable threshold of significance may indicate a significant impact." This subdivision also states that a lead agency has discretion to choose the most appropriate method to evaluate a project's VMT.

Per the Guidelines, a "no impact" determination can be made for a project if any of the following screening criteria are met:

1. Small projects that result in less than 250 daily or 25 peak hour trips
2. Projects within 0.50 miles from the key TPAs of: Metro E Line Culver City Station, Metro E Line La Cienega Station, Westfield-Culver City Transit Center, or the Sepulveda Boulevard & Venice Boulevard intersection may be screened
3. Projects located within any TPA where at least 15% of the on-site residential units are affordable
4. Affordable housing projects where 100% of the dwelling units are affordable
5. Local serving retail projects with less than 50,000 sf in size at a single store

If none of the above screening criteria are met, the Guidelines provide guidance for the further analysis of VMT, as discussed in the following section.

PROJECT VMT ANALYSIS

Culver City VMT Tool (October 2021) (VMT Calculator) was used to conduct the VMT screening evaluation. Based on guidance from the City, the VMT Calculator was modeled for the Project's land uses and density as the primary input.

The detailed screening output from the VMT Calculator is provided in Appendix C.

The Project is located within 0.5 miles of the Sepulveda/Venice Intersection, a designated TPA, and more than 15% of the on-site residential units are affordable. Thus, no mitigation measures are required to address VMT, the Project is presumed to result in a less than significant VMT impact, and no further analysis is required. Nonetheless, as previously detailed, the Project would implement strategies and action plans as part of a comprehensive TDM program in compliance with the requirements set forth in CCMC Section 07.05.015 to reduce single occupancy vehicle trips while promoting the use of alternative transportation modes, thereby further reducing Project VMT.

Section 4C:
VMT Analysis – Transportation Projects

The intent of Threshold C is to assess whether a transportation project would induce substantial VMT by increasing vehicular capacity on the roadway network, such as the addition of through traffic lanes on existing or new highways, including general purpose lanes, high-occupancy vehicle lanes, peak period lanes, auxiliary lanes, and lanes through grade-separated interchanges.

The Project is not a transportation project that would induce automobile travel. Therefore, the Project would not result in a significant impact under Threshold C, and further evaluation is not required.

Section 4D:
Geometric Design Hazards Analysis

Section 4D of the Guidelines requires that potential on-street hazards be reviewed for all projects. This analysis focuses on the off-site conditions affected by the Project.

The analysis involved the review of existing vehicle-vehicle, vehicle-bicycle, and vehicle-pedestrian interactions on transportation infrastructure adjacent to the Project Site and the potential impacts and hazards of the Project on those interactions based on the following factors in Threshold D:

- Bicycle, pedestrian, auto and public transit network and facilities surrounding the Project Site and crossing project driveways
- Relative bicycle, pedestrian, auto, and public transit activity levels
- Existing environment and roadway conditions, such as slopes, curves, connectivity, proximity to intersections, and barriers
- Safety of vehicles accessing the Project driveways
- Sight lines at the driveways and surrounding the site
- Safety of pedestrians and bicyclists when crossing Project driveways
- Proximity of incompatible uses that could cause a transportation hazard

DRIVEWAY DESIGN FEATURES

Vehicular access to the Project Site would be provided by two separate driveways along Washington Boulevard that provide full access operations, including both right- and left-turn ingress and egress. Driveway A would provide commercial, guest, and residential access to Building A from a fire lane along the northeast side of the property, and Driveway B would provide residential access to Building B. Driveway B is an existing driveway, aligned with the west leg of

Prospect Avenue, that would need to be modified as part of the Project to meet City design standards.

The parking garage is intended to serve tenants and retail visitors in Building A and Building B. Level 1 of Building A would provide secure, gated residential parking adjacent to commercial parking on the same level. Level 1 of Building B would provide secure residential parking. Both buildings would provide ramps that lead to Level P1, a subterranean parking garage spanning both Building A and Building B that would provide additional residential spaces. The entire parking area for both buildings will be physically secured for safety.

Retail loading will be accessed from a fire lane along the northeast side of the property at Building A. With the square footage of nonresidential uses in the project, a 12’x40’ loading area with 14’ headroom clearance will be required. Trucks will access the loading area by traveling from west to east and then reversing into this loading zone. They will then exit to the west, back to Washington Boulevard. Materials will be transported directly from the loading area and through a corridor to the retail spaces.

Pedestrian access to the Project would be provided separate from vehicular access via lobby entrances and a public paseo accessed along Washington Boulevard.

The section of Washington Boulevard along which the Project driveways are situated provides four travel lanes, two in each direction, a center turn lane, a northbound right turn lane, and limited unmetered parking on both sides of the street. Sidewalks are provided on Washington Boulevard adjacent to the Project Site. No existing bicycle facilities are provided adjacent to the Project Site, however, the City has proposed Class II bike lane along Washington Boulevard in *Culver City Bicycle and Pedestrian Master Plan* or *Culver City Bicycle & Pedestrian Action Plan*. However, the Project would generate fewer than 5 vehicles per minute across the two driveways on Washington Boulevard. Thus, pedestrians and bicyclists would have adequate gaps in vehicular traffic at the driveways to safely cross, and the Project is unlikely to result in an increase in driveway conflicts. No exceptional horizontal or vertical curvatures exist along this section of roadway that would create sight distance issues for Project traffic utilizing the proposed driveways.

No unusual or new obstacles are presented in the Project's driveway design that would be considered hazardous to pedestrians, bicyclists, or motorists. All driveways will be subject to review by the City.

Pedestrian, Bicycle, and Transit Activity

Adequate sight distance would be provided at the Project driveways to ensure safety for all road users, including pedestrians, bicyclists, and motorists. The Project driveways would be designed to remain clear of hardscapes, vegetation, or signage that would impede sight lines.

Minimal pedestrian and bicycle traffic was observed to travel on Washington Boulevard adjacent to the Project Site. Based on the trip generation estimates detailed in Table 4, the Project would generate fewer than 5 vehicles per minute across the two driveways. Thus, pedestrians and bicyclists would have adequate gaps in vehicular traffic at the driveways to safely cross, and the Project is unlikely to result in an increase in vehicle-pedestrian or vehicle-bicycle conflicts. The Washington Boulevard / Prospect Avenue bus stop is adjacent to the Project Site, however, it is on the opposite side of Washington Boulevard from the Project, so no the sidewalk and bus stop would not be affected by construction. Therefore, the Project would not affect transit activity or access.

Physical Terrain

The Project Site is located on a flat parcel with little to no change in vertical elevation. Therefore, no line-of-sight issues would be caused by changes in elevation, and drivers would be able to safely identify approaching vehicles, pedestrians, and bicycles at the Project driveways. The driveways intersect the public ROW at 90-degree angles to the extent possible, with an adequate building setback to allow pedestrians and bicyclists to observe vehicles within the driveway.

Incompatible Uses

The Project would be compatible with the surrounding residential and commercial uses. Furthermore, no elements of the Project’s uses or design would be considered incompatible.

Summary

Based on the site plan review and design, the Project does not present any geometric design features that would substantially increase hazards related to traffic movement, mobility, or pedestrian accessibility and, thus, Project impacts are considered less than significant.

Chapter 5
Supplemental Transportation Analysis

This chapter summarizes the supplemental transportation analysis of the Project, including Project traffic, access, safety, and circulation, as well as the Project's effect on nearby pedestrian, bicycle, and transit facilities. This chapter also summarizes the evaluation of the Project's operational conditions, parking supply and requirements, and potential effects due to Project construction.

Section 5 of the Guidelines identifies the following supplemental transportation analyses for reviewing potential transportation deficiencies that may result from a development project:

- Traffic Operations
- Transit Operations
- Driveways
- Parking
- Curb Space Allocation
- Safety Analysis

The supplemental transportation analyses were reviewed in detail in Sections 5A-5F. In addition, a review of the construction activities of the Project is provided in Section 5G.

Section 5A
Traffic Operations

This section assesses the ability of the circulation system to accommodate the addition of vehicular traffic generated by the Project and Related Projects.

OPERATIONAL ANALYSIS METHODOLOGY

Intersection peak hour operations were evaluated for typical weekday morning (7:00 AM to 9:00 AM) and afternoon (4:00 PM to 6:00 PM) periods. A total of four intersections in the vicinity of the Project Site were selected for detailed transportation analysis and are shown in Figure 3.

The following traffic conditions were developed and analyzed as part of this study:

- <u>Existing with Project Conditions (Year 2025)</u>: This analysis condition projects the potential intersection operating conditions that could be expected if the Project were built under Existing Conditions.

- <u>Future with Project Conditions (Year 2030)</u>: This analysis condition projects the potential intersection operating conditions that could be expected if the Project were occupied in the projected buildout year. In this analysis, the Project-generated traffic is added to Future without Project Conditions in Year 2030.

- <u>Cumulative with Project Conditions (Year 2045)</u>: This analysis condition projects the potential intersection operating conditions that could be expected if the Project were occupied in the horizon year of the General Plan. In this analysis, the Project-generated traffic is added to Cumulative without Project Conditions in Year 2045.

Operational Evaluation

In accordance with the Guidelines, the intersection delay and queue analyses for the operational evaluation were conducted using the *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2016) (HCM) methodology, which was implemented using Synchro software and signal timing worksheets from the agency of jurisdiction to analyze intersection operating conditions. The HCM signalized methodology calculates the average delay, in seconds, for each vehicle passing through the intersections, while the HCM unsignalized two-way stop-control methodology calculates the control delay, in seconds, for individual approaches of an intersection. Table 5 presents a description of the LOS categories, which range from excellent, nearly free-flow traffic at LOS A, to stop-and-go conditions at LOS F, for signalized intersections. The queue lengths were estimated using Synchro, which reports the 95th percentile queue length, in vehicles for each approach lane, which can be converted to linear feet by multiplying by 25 feet per vehicle. The reported queues are calculated using the HCM signalized and unsignalized intersection methodology.

LOS and queuing worksheets for each scenario are provided in Appendix D.

LOS ANALYSIS

The intersection analysis was conducted based on the HCM methodologies to identify delay and LOS at each of the study intersections with development of the Project. Detailed LOS calculation worksheets are provided in Appendix D.

Existing with Project Conditions

Traffic Volumes. The Project-only morning and afternoon peak hour traffic volumes, described in Chapter 3 and shown in Figure 14, were added to the existing morning and afternoon peak hour traffic volumes shown in Figure 7. The resulting volumes are illustrated in Figure 15 and represent Existing with Project Conditions, assuming Project operation under Existing Conditions.

Intersection LOS. Table 6 summarizes the weekday morning and afternoon peak hour LOS results for each of the study intersections under Existing and Existing with Project Conditions. As shown in Table 6, three out of four study intersections would operate at LOS C or better during both the morning and afternoon peak hours under Existing and Existing with Project Conditions. The remaining study intersection of Culver Boulevard & Elenda Street (Intersection #3) would operate at LOS F in the morning and afternoon peak hours under Existing Conditions and Existing with Project Conditions.

Driveway LOS. Table 6 also summarizes the weekday morning and afternoon peak hour LOS results for the two Project driveways under Existing and Existing with Project Conditions. The reported driveway delay is calculated using the HCM Two-Way Stop Control Unsignalized methodology, which calculates the control delay, in seconds, for each individual movement of an intersection. The reported control delay represents the worst-case movement, typically on the lower volume minor street, and does not account for traffic gaps created by adjacent traffic signals that allow turn movements to proceed from the minor street.

As shown in Table 6, Driveway A would operate at LOS D in the morning and afternoon peak hours under Existing with Project Conditions. Driveway B would operate at LOS D in the morning and afternoon peak hours under Existing Conditions and LOS F under Existing with Project Conditions.

Future with Project Conditions

All future cumulative traffic growth (i.e., ambient and Related Project traffic growth) and transportation infrastructure improvements through Year 2030 described in Chapter 2 were incorporated into this analysis.

Traffic Volumes. The Project-only morning and afternoon peak hour traffic volumes, described in Chapter 3 and shown in Figure 14, were added to the Future without Project (Year 2030) morning and afternoon peak hour traffic volumes shown in Figure 10. The resulting volumes are illustrated in Figure 16 and represent Future with Project Conditions after development of the Project in Year 2030.

Intersection LOS. Table 7 summarizes the results of the Future without Project and Future with Project Conditions (Year 2030) during the weekday morning and afternoon peak hours for the study intersections. As shown in Table 7, three out of four study intersections would operate at LOS C or better during both the morning and afternoon peak hours under Future without Project and Future with Project Conditions (Year 2030). The remaining study intersection of Culver Boulevard & Elenda Street (Intersection #3) would operate at LOS F in the morning and afternoon peak hours under Future without Project and Future with Project Conditions (Year 2030).

Driveway LOS. Table 7 also summarizes the weekday morning and afternoon peak hour LOS results for the two Project driveways under Future without Project and Future with Project Conditions (Year 2030). as detailed above, the reported driveway delay is calculated using the HCM Two-Way Stop Control Unsignalized methodology.

As shown in Table 7, Driveway A would operate at LOS D in the morning and LOS F in the afternoon peak hours under Future with Project Conditions (Year 2030). Driveway B would operate at LOS D in the morning and afternoon peak hours under Future without Project and LOS F in the morning and afternoon peak hours under Future with Project Conditions (Year 2030).

Cumulative with Project Conditions

All future cumulative traffic growth (i.e., ambient and Related Project traffic growth) and transportation infrastructure improvements through the General Plan horizon year of 2045 were incorporated into this analysis.

Traffic Volumes. The Project-only morning and afternoon peak hour traffic volumes, described in Chapter 3 and shown in Figure 14, were added to the Cumulative without Project (Year 2045) morning and afternoon peak hour traffic volumes shown in Figure 11. The resulting volumes are illustrated in Figure 17 and represent Cumulative with Project Conditions after development of the Project in Year 2045.

Intersection LOS. Table 8 summarizes the results of the Cumulative without Project and Cumulative with Project Conditions (Year 2045) during the weekday morning and afternoon peak hours for the study intersections. As shown in Table 8, three out of four study intersections would operate at LOS C or better during both the morning and afternoon peak hours under Cumulative without Project and Cumulative with Project Conditions (Year 2045). The remaining study intersection of Culver Boulevard & Elenda Street (Intersection #3) would operate at LOS F in the morning and afternoon peak hours under Cumulative without Project and Cumulative with Project Conditions (Year 2045).

Driveway LOS. Table 8 also summarizes the weekday morning and afternoon peak hour LOS results for the two Project driveways under Cumulative without Project and Cumulative with

Project Conditions (Year 2045). The reported driveway delay is calculated using the HCM Two-Way Stop Control Unsignalized methodology.

As shown in Table 8, Driveway A would operate at LOS E in the morning and LOS C in the afternoon under Future with Project Conditions (Year 2045). Driveway B would operate at LOS F under Future without Project and Future with Project Conditions (Year 2045).

INTERSECTION QUEUING ANALYSIS

The study intersections were also analyzed to determine whether the lengths of intersection turning lanes could accommodate vehicle queue lengths. The queue lengths were estimated using Synchro software, which reports the 95^{th} percentile queue length, in feet, for each approach lane. The reported queues are calculated using the HCM signalized and unsignalized intersection methodology.

Detailed queuing analysis worksheets are provided in Appendix D.

DRIVEWAY ANALYSIS

Utilizing the same methodology for the intersection analyses, a driveway queuing analysis was conducted to determine whether the driveway and adjacent streets could accommodate vehicle queue lengths. The queue lengths were estimated using Synchro software, which reports the 95^{th} percentile queue length, in feet, for each approach lane. The reported driveway queues are calculated using the HCM unsignalized intersection methodology.

Detailed driveway queuing analysis worksheets are provided in Appendix D.

SIGNAL WARRANT ANALYSIS

In order to assess whether the anticipated operating conditions at Washington Boulevard & Prospect Avenue would warrant the installation of a traffic signal, a signal warrant analysis was prepared for the intersection of Washington Boulevard & Prospect Avenue.

Empirical Data Collection

24-hour traffic volume data along Prospect Avenue was collected in February 2025 and is provided in Appendix B.

Accident data reported from Year 2020 through Year 2024 was also reviewed to identify the number of collisions that have occurred at Washington Boulevard & Prospect Avenue. No collisions were reported at this intersection during the five-year period.

Methodology

The signal warrant analysis was conducted based on the guidelines outlined in the current California Department of Transportation *California Manual on Uniform Traffic Control Devices* (California MUTCD).

The following methodologies, as quoted from the California MUTCD, were used to evaluate signal warrants:

> ***Warrant 1, Eight-Hour Vehicular Volume***
>
> *The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. 03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.*

Warrant 2, Four-Hour Vehicular Volume

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

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.

Warrant 4, Pedestrian Volume

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

Warrant 6, Coordinated Signal System

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

Warrant 7, Crash Experience

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

Analysis Results

Based on the traffic volumes anticipated for the intersection and the results of the signal warrant analysis, Washington Boulevard & Prospect Avenue is projected to meet the minimum thresholds for Warrant 3, Peak Hour, under Cumulative with Project Conditions (Year 2045), as detailed in Appendix E. As such, the installation of a traffic signal may be warranted.

The intersection of Washington Boulevard & Prospect Avenue did not meet the minimum requirements of the remaining signal warrants evaluated. The detailed signal warrant analysis worksheets are provided in Appendix E.

Although the remaining signal warrants are not met, as discussed above, Washington Boulevard and Prospect Avenue are within SRTS Improvement Zones, and the signalization of this intersection may be of particular interest to enhance safety given its proximity to nearby schools.

NEIGHBORHOOD STREET CUT-THROUGH ANALYSIS

A neighborhood street cut-through analysis was conducted to determine potential increases in average daily traffic volumes on designated Local Streets, as classified in the Mobility Element, that can be identified as cut-through trips generated by the Project and that can adversely affect the character and function of those streets.

24-hour street segment counts were conducted in February 2025 along Prospect Avenue between Matteson Avenue and Washington Boulevard. Table 9 shows the existing, future buildout, and future cumulative conditions with and without the Project.

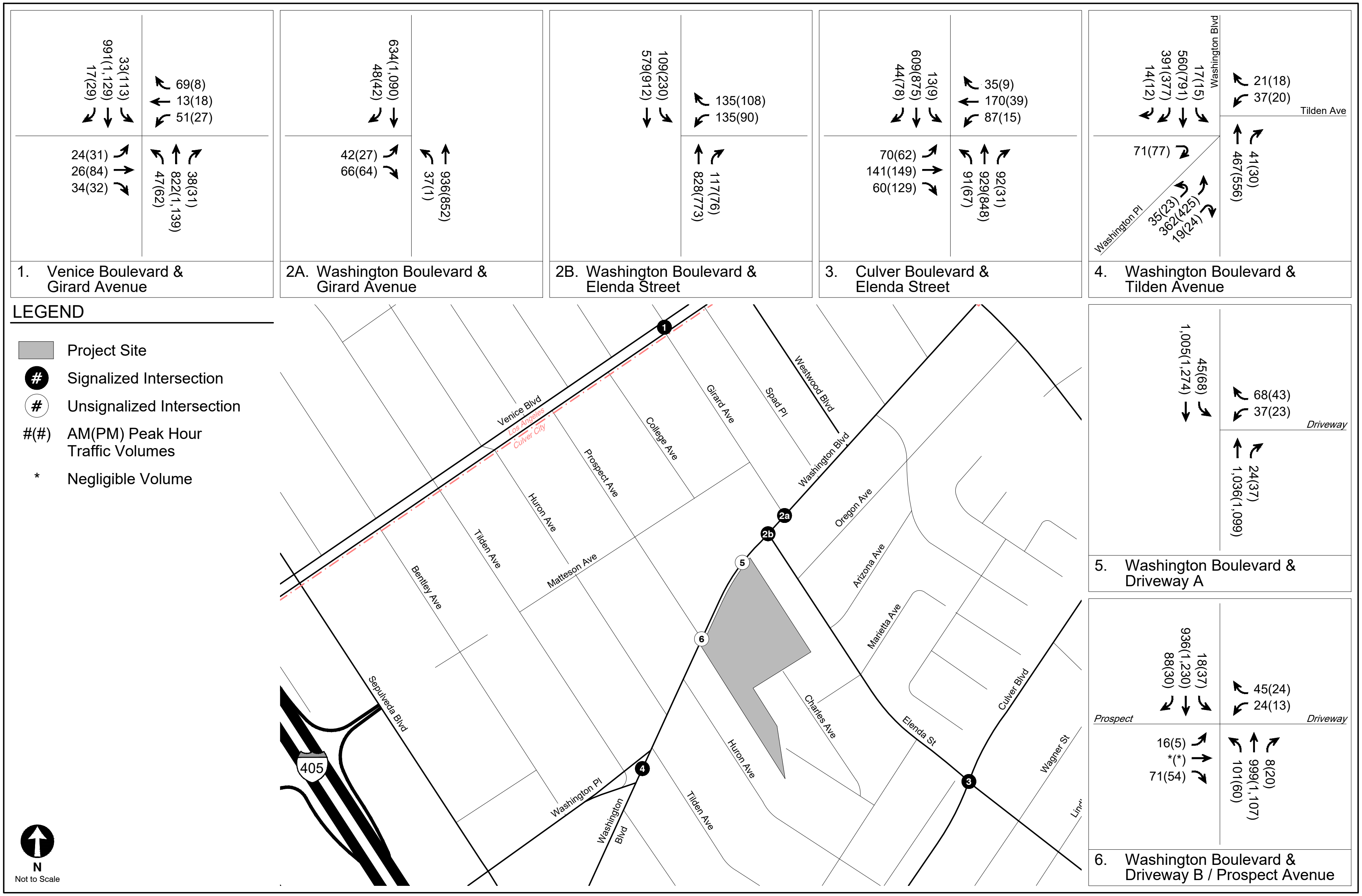
This analysis uses the City's significant project conditions thresholds for residential streets, which would not be considered significant impacts under CEQA:

Projected Average Daily Traffic (ADT) with Project	Project-Related Increase in ADT
999 or less	120 trips or more
1,000 – 1,999	12% or more of final ADT
2,000 – 2,999	10% or more of final ADT
3,000 or more	8% or more of final ADT

Counts were not able to be taken along Girard Avenue between Matteson Avenue and Washington Boulevard; therefore, the most conservative threshold (120 daily trips) was applied to this segment. Vehicle volumes were developed for the segment analysis in the same manner as the intersection analysis.

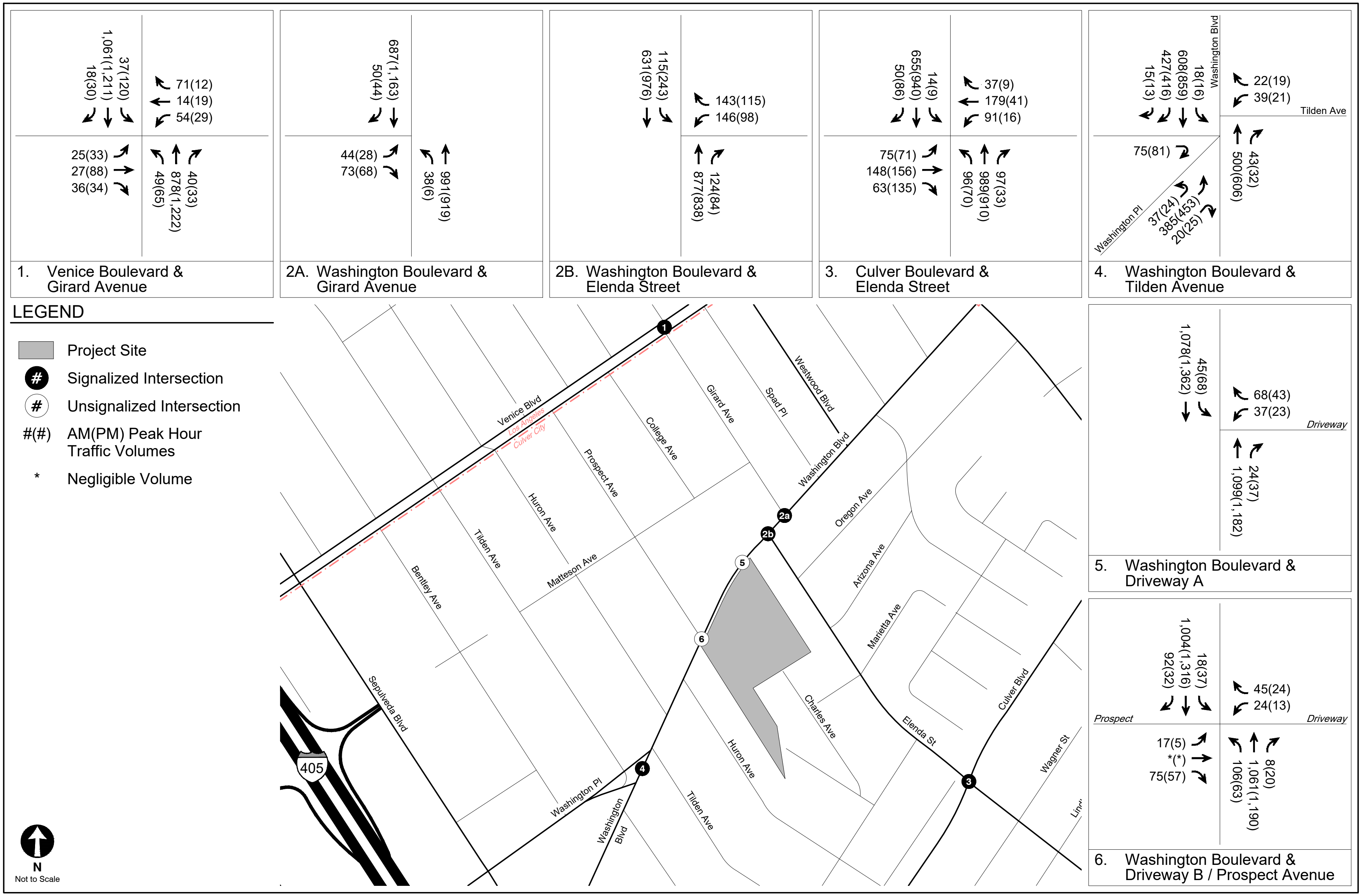
As shown in Table 9, the Project would not create significant project conditions on Prospect Avenue but will add more than 120 daily Project trips to Girard Avenue. As such, the City may require traffic calming improvement measures to minimize traffic on Girard Avenue.

Additionally, the Project is not anticipated to generate any diverted trips onto residential Local Streets because the majority of the fronting and adjacent Arterial Streets provide sufficient capacity to accommodate Project traffic and the anticipated levels of Project traffic on any of the congested corridors in the area would not be substantial enough to result in the diversion of any existing Arterial Streets trips.



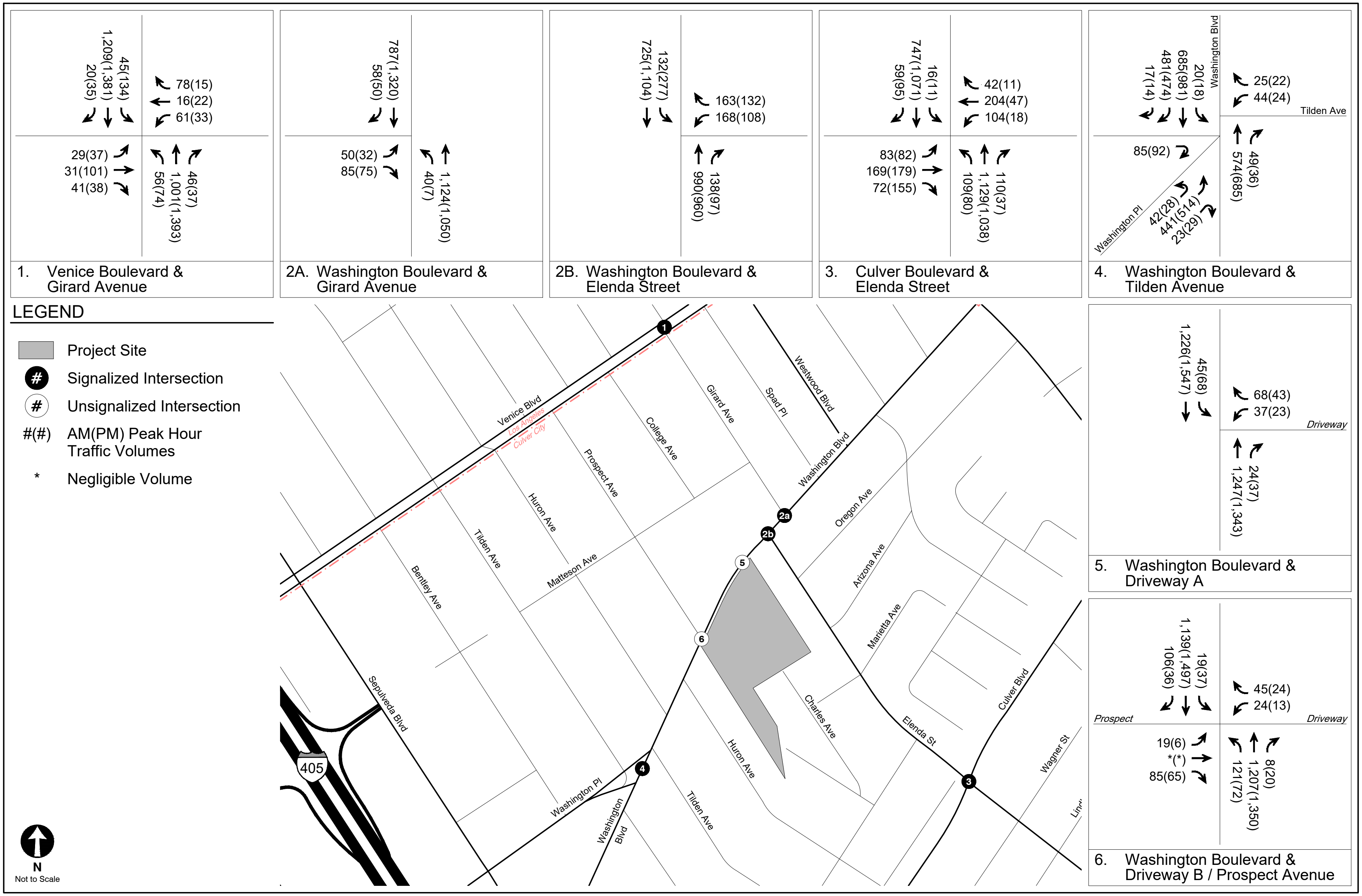
EXISTING WITH PROJECT CONDITIONS (YEAR 2025)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 15



FUTURE WITH PROJECT CONDITIONS (YEAR 2030)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 16



CUMULATIVE WITH PROJECT CONDITIONS (YEAR 2045)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 17

TABLE 5
LEVEL OF SERVICE DEFINITIONS FOR INTERSECTIONS

Level of Service	Definition	Delay [a]	
		Signalized Intersections	**Unsignalized Intersections**
A	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.	0.0 - 10.0	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.	10.1 - 20.0	10.1 - 15.0
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.	20.1 - 35.0	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.	35.1 - 55.0	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.	55.1 - 80.0	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.	> 80.0	> 50.0

Notes:
Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2016).
[a] Measured in seconds.

TABLE 6
EXISTING WITH PROJECT CONDITIONS (YEAR 2025)
INTERSECTION LEVELS OF SERVICE

No	Intersection	Peak Hour	Exisiting		Existing with Project Conditions	
			Delay	LOS	Delay	LOS
1. [a]	Venice Boulevard & Midvale Avenue/Girard Avenue	AM PM	8.0 8.5	A A	8.8 8.4	A A
2A. [b]	Washington Boulevard & Girard Avenue	AM PM	11.0 11.4	B B	9.7 12.7	A B
2B. [b]	Washington Boulevard & Elenda Street	AM PM	23.8 17.4	C B	21.4 16.0	C B
3. [a]	Culver Boulevard & Elenda Street	AM PM	81.3 89.2	F F	81.5 88.9	F F
4A. [b]	Washington Boulevard & Tilden Avenue	AM PM	11.1 18.1	B B	14.8 18.3	B B
4B. [b]	Washington Boulevard & Washington Place	AM PM	17.0 15.2	B B	16.1 15.7	B B
5. [c]	Washington Boulevard & Driveway A	AM PM	0.0 0.0	A A	25.7 33.4	D D
6. [c]	Washington Boulevard & Driveway B / Prospect Avenue	AM PM	25.9 25.7	D D	68.8 119.1	F F

Notes:

Delay is measured in seconds per vehicle

LOS = Level of service

[a] Results per Synchro 11 (HCM 6th Edition Methodology)

[b] Results per Synchro 11 (HCM 2000 Methodology)

[c] Intersection analysis based on the HCM 6th Edition Two-Way Stop Control Unsignalized methodology, which calculates the control delay, in seconds, for each individual movement of an intersection. The reported control delay represents the worst-case movement for the minor street and does not account for traffic gaps created by the metering of traffic via the adjacent traffic signals.

TABLE 7
FUTURE WITH PROJECT CONDITIONS (YEAR 2030)
INTERSECTION LEVELS OF SERVICE

No	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions	
			Delay	LOS	Delay	LOS
1. [a]	Venice Boulevard & Midvale Avenue/Girard Avenue	AM PM	8.2 9.0	A A	9.0 8.9	A A
2A. [b]	Washington Boulevard & Girard Avenue	AM PM	11.3 12.2	B B	9.8 13.9	A B
2B. [b]	Washington Boulevard & Elenda Street	AM PM	22.7 18.7	C B	22.9 17.5	C B
3. [a]	Culver Boulevard & Elenda Street	AM PM	88.1 110.7	F F	88.3 110.4	F F
4A. [b]	Washington Boulevard & Tilden Avenue	AM PM	16.0 19.0	B B	15.4 19.2	B B
4B. [b]	Washington Boulevard & Washington Place	AM PM	17.0 15.2	B B	16.2 15.8	B B
5. [c]	Washington Boulevard & Driveway A	AM PM	0.0 0.0	A A	28.8 74.3	D F
6. [c]	Washington Boulevard & Driveway B / Prospect Avenue	AM PM	32.8 30.7	D D	98.1 223.9	F F

Notes:

Delay is measured in seconds per vehicle
LOS = Level of service
[a] Results per Synchro 11 (HCM 6th Edition Methodology)
[b] Results per Synchro 11 (HCM 2000 Methodology)
[c] Intersection analysis based on the HCM 6th Edition Two-Way Stop Control Unsignalized methodology, which calculates the control delay, in seconds, for each individual movement of an intersection. The reported control delay represents the worst-case movement for the minor street and does not account for traffic gaps created by the metering of traffic via the adjacent traffic signals.

TABLE 8
CUMULATIVE WITH PROJECT CONDITIONS (YEAR 2045)
INTERSECTION LEVELS OF SERVICE

No	Intersection	Peak Hour	Cumulative without Project Conditions		Cumulative with Project Conditions	
			Delay	LOS	Delay	LOS
1. [a]	Venice Boulevard & Midvale Avenue/Girard Avenue	AM PM	9.0 10.3	A B	9.8 10.4	A B
2A. [b]	Washington Boulevard & Girard Avenue	AM PM	13.4 14.9	B B	11.7 16.7	B B
2B. [b]	Washington Boulevard & Elenda Street	AM PM	30.2 20.5	C C	30.8 19.3	C B
3. [a]	Culver Boulevard & Elenda Street	AM PM	112.5 163.1	F F	112.5 162.6	F F
4A. [b]	Washington Boulevard & Tilden Avenue	AM PM	18.5 21.4	B C	17.7 21.8	B C
4B. [b]	Washington Boulevard & Washington Place	AM PM	17.7 15.7	B B	17.0 16.2	B B
5. [c]	Washington Boulevard & Driveway A	AM PM	0.0 0.0	A A	40.5 17.7	E C
6. [c]	Washington Boulevard & Driveway B / Prospect Avenue	AM PM	60.4 57.1	F F	252.3 2717.2	F F

Notes:

Delay is measured in seconds per vehicle

LOS = Level of service

[a] Results per Synchro 11 (HCM 6th Edition Methodology)

[b] Results per Synchro 11 (HCM 2000 Methodology)

[c] Intersection analysis based on the HCM 6th Edition Two-Way Stop Control Unsignalized methodology, which calculates the control delay, in seconds, for each individual movement of an intersection. The reported control delay represents the worst-case movement for the minor street and does not account for traffic gaps created by the metering of traffic via the adjacent traffic signals.

TABLE 9
NEIGHBORHOOD STREET CUT-THROUGH ANALYSIS

No	Location	Weekday Bidirectional Daily Volume			Segment Analysis		
		Existing Year (2025) ADT	Project Only	Existing Year (2025) with Project	% of Final ADT	Significance Threshold	Significant Project Condition?
1.	Prospect Avenue between Matteson Avenue and Washington Boulevard	1,562	*	1,562	-	+12.0%	No
2. [a]	Girard Avenue between Matteson Avenue and Washington Boulevard	-	226	-	-	120 Trips	Yes

No	Location	Weekday Bidirectional Daily Volume			Segment Analysis		
		Future Year (2030) ADT	Project Only	Future Year (2030) with Project	% of Final ADT	Significance Threshold	Significant Project Condition?
1.	Prospect Avenue between Matteson Avenue and Washington Boulevard	1,640	*	1,640	-	+12.0%	No
2. [a]	Girard Avenue between Matteson Avenue and Washington Boulevard	-	226	-	-	120 Trips	Yes

No	Location	Weekday Bidirectional Daily Volume			Segment Analysis		
		Cumulative Year (2045) ADT	Project Only	Cumulative Year (2045) with Project	% of Final ADT	Significance Threshold	Significant Project Condition?
1.	Prospect Avenue between Matteson Avenue and Washington Boulevard	1,874	*	1,874	-	+12.0%	No
2. [a]	Girard Avenue between Matteson Avenue and Washington Boulevard	-	226	-	-	120 Trips	Yes

Notes:
* A negligible number of Project trips
[a] Weekday bidirectional daily volumes were not available at this street segment. In the absence of volume data, the most conservative significance threshold of 120 Project-related trips was applied to determine if significant Project conditions occur.

Section 5B
Transit Operations

This section reviews the Project's potential effect on existing transit capacity of transit routes and stops that serve the Project area.

TRAVEL DEMAND ANALYSIS

Although the Project (and other Related Projects) will cumulatively add transit ridership, the Project Site and the Study Area are served by multiple bus lines, as detailed in Table 2. As illustrated in Figure 6, the nearest stops to the Project Site are located at Washington Boulevard / Prospect Avenue, Washington Boulevard / Elenda Street and Elenda Street / Oregon Avenue, serving Culver CityBus Line 1 and Line 5. The Washington Boulevard / Prospect Avenue and Washington Boulevard / Elenda Street stops have a bench and bus shelter, and the Elenda Street / Oregon Avenue stop has sparce tree cover.

Based on the assumptions in the trip generation estimates shown in Table 4, a transit/walk-in reduction of up to 10% was applied to account for the use of non-auto travel modes (e.g., transit). The Project trips expected to use transit during both the morning and afternoon peak hour trips are projected at 33 vehicle-transit trips each. Based on the average vehicle occupancy factor of 1.55 for all trip purposes in Los Angeles County as identified in *SCAG Regional Travel Demand Model and 2012 Model Validation* (Southern California Association of Governments, March 2016), the peak hour vehicle-transit trips correspond to an estimated equivalence of 52 person-transit trips in each of the morning and afternoon peak hours. The adjacent transit capacity within the Study Area can accommodate the intensification of transit usage attributable to the Project without significantly absorbing excess capacity.

Section 5C
Driveways

This section provides a qualitative evaluation of the Project vehicle, pedestrian, and bicycle access per Section 5C of the Guidelines.

VEHICLES

Vehicular access to the Project Site would be provided by two separate driveways along Washington Boulevard that provide full access operations, including both right- and left-turn ingress and egress along Washington Boulevard. Driveway A would provide commercial, guest, and residential access to Building A from a fire lane along the northeast side of the property, and the Driveway B would provide residential access to Building B. Driveway B is an existing driveway that would need to be modified as part of the Project to meet City design standards.

The driveways would be designed to safely accommodate all anticipated vehicle types generated by the Project. Adequate internal circulation and queuing area would be provided on-site to limit spillover into the public ROW. All parking on-site would be self-parking. The commercial, rubbish, delivery, and residential move-in loading zones would utilize both fire roads adjacent to the Project.

PEDESTRIANS AND BICYCLES

Pedestrian and bicycle access to the Project Site would be provided separately from the vehicular driveways via separate entrances along Washington Boulevard to reduce potential vehicle-pedestrian and vehicle-bicycle conflicts. Furthermore, the Project would include landscaping and curb cut and drive aisle improvements to ensure maximum visibility and meet City design guidelines.

Section 5D
Parking

This section provides an analysis of the proposed parking and the potential parking impacts of the Project.

PARKING SUPPLY

The Project would provide vehicle and bicycle parking spaces within two grade-level parking garages plus one subterranean parking garage.

In October 2022, the City Council passed a motion that eliminated minimum parking requirements citywide. As a result, no parking is required to be constructed by code. However, the Project would provide a supply of 715 vehicle parking spaces, 30 commercial and 685 residential.

The Level 1 parking entrances would lead to two at-grade parking garages, providing 30 commercial and guest spaces and 40 residential spaces on Level 1 of Building A and 39 residential spaces on Level 1 of Building B. The Level P1 parking entrances would provide ramps that lead to one subterranean parking garage spanning both Building A and Building B, providing 606 residential spaces. The entire parking area for both buildings will be physically secured for safety.

BICYCLE PARKING CODE REQUIREMENTS

CCMC Section 17.320 details the bicycle parking requirements for new developments.

As shown in Table 10, the Project would be required to provide 20 short-term and 134 long-term bicycle parking spaces, for a total of 154 parking spaces. The Project proposes to provide 154 parking spaces, which meets the CCMC requirement.

TABLE 10
BICYCLE CODE PARKING REQUIREMENTS

Land Use	Size	Short-Term		Long-Term	
		Rate [a]	Requirement	Rate [a]	Requirement
Residential					
201+ dwelling units	508 du	1.0 sp / 40 du	13 sp	1.0 sp / 4.0 du	127 sp
Commercial	14,087 sf	1.0 sp / 2,000 sf	7 sp	1.0 sp / 2,000 sf	7 sp
		Total Short-Term	**20 sp**	**Total Long-Term**	**134 sp**
				Total Bicycle Code Parking Requirement	**154 sp**
				Total Bicycle Parking Provided	**154 sp**

Notes:
[a] Bicycle parking requirements per City of Culver City Municipal Code Section 17.320.

Section 5E
Curb Space Allocation

This section details our review of the management of curb space adjacent to the Project Site between passenger and commercial loading and parking areas, bus stop facilities, and bicycle and other alternative transportation mode parking while maintaining visibility at driveways.

ON-STREET PARKING

As previously detailed, the on-street unmetered parking spaces along Washington Boulevard within the vicinity of the Project Site would be maintained with development of the Project. The existing red curb adjacent to the Project Site would be maintained as necessary to provide adequate visibility for vehicles exiting the Project Site.

PASSENGER AND COMMERCIAL LOADING

All passenger and commercial loading would be provided on-site and would not affect the adjacent curb space adjacent to the Project Site.

TRANSIT FACILITIES

The Washington Boulevard / Prospect Avenue bus stop is adjacent to the Project Site; however, it is on the opposite side of Washington Boulevard from the Project. Therefore, transit stops would not affect visibility at the Project driveway.

BICYCLE PARKING FACILITIES

There are currently no existing or proposed public bicycle parking facilities adjacent to the Project Site along Washington Boulevard. In addition, the Project does not propose the installation of bicycle parking within the public ROW. Therefore, no bicycle parking facilities are anticipated to affect visibility at the Project driveway.

Section 5F
Safety Analysis

This section details the Project's potential effects on corridors within the HIN identified in *Culver City Bicycle & Pedestrian Action Plan*, as well as the Project's proximity to high-risk corridors and intersections where pedestrian and bicycle involved collisions have been recorded by the City as part of the LRSP.

VEHICULAR SAFETY

The Project Site is located adjacent to Washington Boulevard, which is identified as part of the HIN in *Culver City Bicycle & Pedestrian Action Plan*. However, as previously discussed, the Project would ensure that the two driveways are designed in accordance with City standards to maximize sight lines and limit potential vehicle-vehicle, vehicle-pedestrian, and vehicle-bicycle conflicts. Adequate distance between the two driveways would be provided to allow visibility between drivers exiting either driveway. Similarly adequate distance would be provided between the Driveway A and the intersection of Washington Boulevard & Elenda Street to the north of the Project Site as well as between Driveway B and the intersection of Washington Boulevard & Huron Avenue to the south.

PEDESTRIAN AND BICYCLE SAFETY

As previously detailed, Washington Boulevard is identified as part of the HIN and is identified in the LRSP as an area with high levels of collisions involving pedestrians and bicyclists. Therefore, the Project would improve the curb cuts for the Project driveways to meet Americans with Disabilities Act standards and improve existing sidewalks with landscaping adjacent to the Project frontage.

Section 5G
Construction Impact Analysis

This section summarizes the construction schedule and construction activities associated with the Project. The quantities for trucks and worker activity are preliminary estimates and these values may change once the construction program is finalized.

PROPOSED CONSTRUCTION SCHEDULE

The Project is anticipated to be constructed over an approximately 42-month period, with completion anticipated in Year 2030 and the first units completed at 36 months. Peak haul truck activity occurs during the demolition phase and peak worker activity occurs during the building construction phase. These two phases of construction were studied in greater detail.

DEMOLITION PHASE

With the implementation of the Construction Management Plan, which is described in more detail below, it is anticipated that almost all haul truck activity to and from the Project Site would occur outside of the morning and afternoon peak hours. In addition, as discussed in more detail in the following section, worker trips to and from the Project Site would also occur outside of the peak hours. Therefore, no peak hour construction traffic constraints are expected during the demolition phase of construction.

Haul trucks would travel on approved truck routes designated within the City and take the most direct route to the appropriate freeway ramps. The haul route will be reviewed and approved by the City.

Demolition Phase Trip Generation

Based on projections compiled for the Project, approximately 100,000 cubic yards (CY) of material would be excavated and removed from the Project Site. It is anticipated that a maximum of 120 haul truckloads per workday, based on an anticipated haul truck capacity of 14 CY would be required during this phase. Thus, up to 240 daily truck trips (120 inbound, 120 outbound) are forecasted to occur during the demolition period, with approximately 40 trips per hour uniformly over a typical six-hour off-peak hauling period.

In addition, a maximum of 36 daily construction worker trips are anticipated during the demolition phase. The 36 construction worker trips would result in 72 one-way vehicle trips (36 inbound, 36 outbound) to and from the Project Site on a daily basis. It is anticipated that the 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. Construction-related peak hour trip generation from trucks and workers would be substantially less than the Project trip generation estimates in Table 4. Therefore, no peak hour construction traffic constraints are expected during the demolition phase of construction.

BUILDING CONSTRUCTION PHASE

During the building construction phase, parking for construction workers would generally be provided on-site or in local public parking facilities. Restrictions against workers parking in the public ROW in the vicinity of (or adjacent to) the Project Site would be identified as part of the Construction Management Plan. Construction materials storage and truck staging would generally be contained on-site; however, some work may necessitate temporary closures along the public ROW along Washington Boulevard.

The traffic constraints associated with construction workers depend on the number of construction workers employed during various phases of construction, as well as the travel mode and travel time of the workers. In general, the hours of construction typically require workers to be on-site before the weekday morning commuter peak period and allow them to leave before or after the afternoon commuter peak period (i.e., arrive at the site prior to 7:00 AM and depart before 4:00

PM or after 6:00 PM). Therefore, most, if not all, construction worker trips would occur outside of the typical weekday commuter peak periods.

According to construction projections prepared for the Project, the building construction phase would employ the most construction workers, with a maximum of 255 workers per day. The estimated number of daily vehicle trips associated with the construction workers is approximately 510 one-way trips (255 inbound, 255 outbound), but nearly all those trips would occur outside of the peak hours, as described above. As such, the building construction phase of Project construction is not expected to cause traffic constraints at any of the study intersections.

POTENTIAL CONSTRAINTS ON ACCESS, TRANSIT, AND PARKING

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.

Access

Construction activities are expected to be primarily contained within the Project Site boundaries. However, it is expected that construction fences may intermittently encroach into the public ROW (e.g., sidewalks and roadways) adjacent to the Project Site, including the adjacent parking. However, two-way operations would be maintained on Washington Boulevard. Temporary traffic controls would be provided to direct traffic around any closures as required in the Construction Management Plan and emergency access would not be impeded.

The use of the public ROW would require temporary re-routing of pedestrian and bicycle traffic. The Construction Management Plan would include measures to ensure pedestrian and bicycle safety along the affected sidewalks, bicycle facilities, and temporary walkways (e.g., use of light-duty barriers and cones, use of directional signage, maintaining continuous and unobstructed pedestrian paths, and/or providing overhead covering).

Transit

The Washington Boulevard / Prospect Avenue bus stop is adjacent to the Project Site; however, it is on the opposite side of Washington Boulevard from the Project Site. Thus, no temporary bus stop relocation is anticipated due to the construction of the Project.

Parking

The adjacent parking spaces along Washington Boulevard are anticipated to be intermittently closed for staging and other construction activities. Thus, construction activities would potentially result in the temporary loss of up to 6 unmetered public parking spaces along Washington Boulevard.

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 the City for review and approval prior to commencing construction. 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 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 on Washington Boulevard to ensure traffic safety on the public ROW. These controls shall include, but not be limited to, flag people trained in pedestrian and bicycle safety.
- Scheduling of construction activities to reduce the effect on traffic flow on surrounding arterial streets.
- Spacing of trucks to discourage a convoy effect.
- Containment of construction activity within the Project Site boundaries to the extent feasible.

- 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., to occur outside the commuter peak hours.

- Maintenance of a log, available on the job site at all times, documenting the dates of hauling and the number of trips (i.e., trucks) per day.

- 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.

It is likely that construction management plans would also be submitted for approval to the City by the Related Projects prior to the start of construction activities. As part of the City's established review process of construction management plans, potential overlapping construction activities and proposed haul routes would be reviewed to minimize the impacts of cumulative construction activities on any particular roadway.

Chapter 6
Summary and Conclusions

This study was undertaken to analyze the potential transportation impacts of the mixed-use office development Project on regional VMT as well as the local street system. The following summarizes the results of this analysis:

- The Project is located at 10950 Washington Boulevard.
- The Project proposes the demolition of two existing office buildings and the construction of a new, mixed-use residential and commercial project with a public outdoor paseo. The redevelopment would include a total of 508 housing units, including 79 units of affordable housing, and 14,087 sf of ground-floor, neighborhood-serving commercial space, replacing the existing 160,438 sf of office. The Project is anticipated to be completed in Year 2030.
- The Project is estimated to generate 1,508 net new daily trips, including 46 net new morning peak hour trips (-102 inbound trips, 148 outbound trips) and 57 net new afternoon peak hour trips (127 inbound trips, -70 outbound trips).
- The Project is consistent with the City plans, programs, ordinances, and policies and would not result in geometric design hazard impacts.
- The Project was not required to perform a VMT analysis because it is located within 0.5 miles of a designated TPA and more than 15% of the on-site residential units are affordable. Thus, no mitigation measures are required to address VMT, and the Project is presumed to result in a less than significant VMT impact.
- The Project provides adequate internal circulation to accommodate vehicular, pedestrian, and bicycle traffic without impeding traffic movements on City streets.
- The design of Project driveways does not introduce safety hazards for pedestrians, bicyclists, or motorists.
- The Project will incorporate pedestrian and bicycle-friendly designs, such as bicycle parking and improved sidewalks with landscaping adjacent to the Project Site.
- All construction activities would occur outside of the commuter morning and afternoon peak hours to the extent feasible and will not result in significant traffic impacts. A Construction Management Plan will ensure that construction impacts are less than significant.

- The Project's proposed parking supply would satisfy the CCMC bicycle parking requirements.

References

California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations, Title 14, Section 15000 and following).

City of Culver City Complete Streets Policy, City of Culver City, Adopted January 13, 2020.

Culver City VMT Tool, City of Culver City, October 2021.

Culver City Bicycle & Pedestrian Action Plan, Culver City Public Works Department, June 2020.

Culver City General Plan 2045, City of Culver City, effective October 9, 2024.

Culver City General Plan Land Use and Community Design Element, City of Culver City, adopted May 24, 2004effective October 9, 2024.

Culver City General Plan Mobility Element, City of Culver City, effective October 9, 2024.

Culver City Municipal Code, City of Culver City.

Culver City Residential Parkway Guidelines, City of Culver City, 2016.

Culver City Transportation Study Criteria and Guidelines, Culver City Public Works Department, July 2020.

Culver Crest: Recommendations for R-1 Neighborhood Hillside Development Standards, John Kaliski Architects PlaceWorks, and RMA GeoScience, January 4, 2017.

Highway Capacity Manual, 6th Edition, Transportation Research Board, 2016.

Local Roadway Safety Plan, City of Culver City, November 2021.

Multi-Family Neighborhood Residential Design Guidelines – Gateway Adjacent Neighborhood, City of Culver City, Adopted July 13, 2011.

Multi-Family Neighborhood Residential Design Guidelines Gateway Neighborhood, City of Culver City, Adopted March 24, 2010.

Neighborhood Traffic Management Program (NTMP) Procedures Manual, City of Culver City, November 22, 2004.

SCAG Regional Travel Demand Model and 2012 Model Validation, Southern California Association of Governments, March 2016.

Short-Range Mobility Plan, Culver CityBus, FY 2022-2026.

State of California Senate Bill 743, Steinberg, 2013.

Trip Generation Manual, 10th Edition, Institute of Transportation Engineers, 2017.

Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.

Appendix A

Memorandum of Understanding

Memorandum of Understanding for Transportation Study

This Memorandum of Understanding (MOU) acknowledges and agrees to all the City of Culver City requirements and fees for the review of a transportation study for the following project.

Date Submitted: ____________ MOU Version # 2

Project Name: 10950 Washington Boulevard

Project Address: 10950 Washington Boulevard, Culver City, CA 90232

Project Description: Building A: 248 du & 14,087 sf restaurant; Building B: 260 du

Land Use	Gross Floor Area (sq. ft.) *Defined per latest ITE publication*	Residential Units (#)
Affordable Housing		80
Multi-Family Housing		428
High-Turnover (Sit-Down) Restaurant	14,087	

Project Horizon Year: 2027 Ambient Growth Rate (% per year): 1%

Directional Distribution (%): N: 35 S: 35 E: 15 W: 15

Trip Generation Rates: Show AM, PM and daily trip generation rates for each land use and attach total daily trips generation calculations. Indicate ITE Latest Edition/Other ITE 11th Ed

Land Use	ITE Code#	AM Trips		PM Trips		Daily Totals	
		In	Out	In	Out	In	Out
See Table 2							

Study Intersections: Show all study intersections, intersections subject to capacity analysis credit for advanced traffic signal control synchronization, whether intersections are signalized or non-signalized, and use the same numbering system for all lists of intersections and figures in the study.

No.	Intersection	Signalized/Non-Signalized	Jurisdiction
	See Table 3		

Residential Streets: Show all residential streets to be studied.

No.	Street Name	Limits	Jurisdiction
	N/A		

Trip Credits: Indicate trip credits to be requested (subject to City approval)

	Trip Credits	Yes/No
Existing Uses		Yes
Pass-By Trips		Yes
Internal Trip Capture		Yes
Transit-Oriented Development (TOD)		No
Transportation Demand Management (TDM)		No

Related Projects: Before the start of any proposed project analysis, consultants shall:

1. Obtain a list of related projects from the Culver City Current Planning Division and other affected jurisdictions.
2. Prepare a draft list of "related projects specific to the proposed project."
3. Obtain written approval from the City of the "related projects specific to the proposed project."

Maps: The following maps shall be attached to the MOU:

1. A map showing the study intersections and street segments to be analyzed, including City limit lines where applicable.
2. A map showing the project's trip distribution percentages for each land use (inbound and outbound) on the area's road network.
3. A map showing the project's trip assignments at the study intersections and project driveways, as well as road segments when applicable.
4. A site plan of the project showing property lines, alleys, project's driveways and nearby driveways and intersections on both sides of the street including dimensions.

Proposed Mitigation and Transportation Improvements: Any proposed transportation improvement(s) or mitigation measure(s) shall be listed and accompanied by plans of the existing and proposed improvements, including city limit lines and existing and proposed property lines. The City may initially accept conceptual plans to be included in the Transportation Study. Detailed design of such improvements will be part of the project's plans submittals.

Post-Occupancy Traffic Counts: By signing below, the Property Owner/ Developer/Applicant hereby agrees to pay for and submit to the City a post-occupancy traffic count analysis of the development to the satisfaction of the City. The analysis shall determine the amount of actual traffic (motor vehicle, bicycle, and pedestrian) generated by the development compared to the ITE trip generation rates. The analysis shall include a traffic count of all onsite driveways taken upon reaching eighty-five percent (85%) occupancy of the total building gross floor area or within one (1) year of the issuance of the first Temporary Certificate of Occupancy (TCO), as determined by the City. The data shall be used to confirm the findings in the approved study and not result in any additional traffic mitigation measures and/or conditions of approval on the subject project.

Fees: Payment of a fee to the City's PWD for the City's processing of the MOU shall be required before the City approves the MOU. Payment for review of the Transportation Study shall be paid before the City's PWD completes its review of the Transportation Study. Said fees shall be per the most recent Fee Schedule as approved by the City Council.

Applicant Information:

	Property Owner/Applicant	Developer/Applicant	Traffic Consultant
Name	Chris Pearson		Lauren Mullarkey-Williams
Title	Senior Vice-President, Development Planning		Associate
Company	Hudson Pacific Properties		Gibson Transportation Consulting, Inc.
Street Address	11601 Wilshire Blvd., 9th Fl.		655 N Central Ave., Suite 920
City, State, Zip	Los Angeles, CA 90025		Glendale, CA 91203
Office	323-468-3258		213-683-0088
Cell			
Fax			
Email	cpearson@hudsonppi.com		lmullarkey-williams@gibsontrans.com

Public Agency Information: If any of the intersection(s) to be studied as part of this study are located within the City of Los Angeles, the unincorporated areas of Los Angeles County and/or impact any other public agency (i.e., Caltrans), then this MOU shall also be approved by the reviewing staff representative from each agency:

	City of Los Angeles	County of Los Angeles	Other Public Agency
Name	Pedro Ayala		
Title	Transportation Engineering Associate III		
Company	LADOT		
Street Address	7166 W Manchester Ave Rm #11		
City, State, Zip	Los Angeles, CA 90045		
Office	213-485-1062		
Cell			
Fax			
Email	pedro.ayala@lacity.org		

Signatures/Expiration: This MOU shall become valid as of the date of the City's signature and expire one year thereafter. If the administrative draft of the study has not been filed with the City by the expiration date, the MOU shall expire and a new MOU filing, fee, review, and approval process shall be required.

Approved By: Date:

________________ 1/25/24

Property Owner/Applicant

________________ ________

Developer/Applicant

Lauren Mullarkey-Williams 1/23/24

Traffic Consultant

________________ 4/2/24

City of Culver City

TABLE 1
CULVER CITY TRANSPORTATION STUDY SCREENING REVIEW

Analysis [a]	Required?	Analysis to be Provided in Transportation Study
Transportation Study Contents		
Site Plan Review	Yes	A site plan will be provided which provides existing and proposed on-site and off-site Project details and improvements as specified in the Transportation Study Guidelines.
Existing Transportation Network Review	Yes	The existing transportation network review will establish the bicycle, pedestrian, transit, and auto traffic conditions in which the project is proposed, which shall be illustrated in the following maps: ▪ Study Area Circulation Map ▪ Traffic Routes Map ▪ Base Year Traffic Volumes Map ▪ Project Trip Generation and Future Traffic Volumes Map ▪ Site Vicinity Map ▪ Lane Configurations Map
Existing Transit Network Review	Yes	For transit analysis, the study will provide an analysis of weekday transit service and stops/stations within a quarter mile of the project site, including: ▪ Confirmation of transit features listed in the Project Description and Existing Transportation Network Review ▪ Any existing operational conflicts or hazards to transit operations in the study area, especially along travel lanes where transit vehicles operate and at transit stop/station locations
CEQA Transportation Analysis and Mitigations		
Programs, Plans, Ordinances, and Policies	Yes	The study will review the City's programs, plans, ordinances and policies addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as specified in Table 1 of the *Culver City Transportation Study Criteria and Guidelines* .
VMT - Land Use Projects	No	The proposed development project does not meet the screening thresholds for a VMT analysis. The Project is located within 0.5 miles of the Sepulveda Boulevard & Venice Boulevard Intersection identified as a key Transit Priority Area. Additionally, the Project proposes local serving retail uses of less than 50,000 sf. The study will discuss the VMT screening thresholds and the Project's consistency with the guidelines.
VMT - Transportation Projects	No	The proposed development is not considered a "Transportation Project" and therefore, it is not conflicting or inconsistent with CEQA Guideline Section 15064.3(b)(2).
Geometric Design Hazards	Yes	The study will provide a review of potentially hazardous conditions due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., oversized vehicles).

Notes:
[a] Based on *Culver City Transportation Study Criteria and Guidelines*, City of Culver City, July 2020.

TABLE 1 (CONTINUED)
CULVER CITY TRANSPORTATION STUDY SCREENING REVIEW

Analysis [a]	Required?	Analysis to be Provided in Transportation Study
Supplemental Transportation Analysis Requirements		
Traffic Operations	Yes	The study will assess the ability of the circulation system to accommodate the addition of vehicular traffic generated by the related projects and the subject project, including: ▪ Intersection LOS and queuing including trip generation, distribution under Existing, Existing with Project, Future without Project, Future with Project, Cumulative without Project, and Cumulative with Project Conditions ▪ Driveway LOS and queuing including potential vehicular conflicts, motorists' visibility at project driveways, and potential conflicts with pedestrians and bicyclists, ▪ Ability to conduct loading operations on the site and maneuver into parking stalls ▪ The potential increase in average daily traffic on the adjacent street segments
Transit Operations	Yes	The study will identify regional and local fixed-route transit operators providing service to the project and obtain relevant ridership data. The study will document potential project trip impact on transit demand and capacity for routes servicing the project.
Driveways	Yes	The study will provide a review of the Project driveways and consult with the City Mobility & Traffic Engineering and Current Planning Divisions to determine if vehicle access is limited on certain streets where the City is focusing on efforts to enhance the pedestrian-oriented environment. A pedestrian and bicyclist access assessment would also be included to ensure the project avoids unsafe conflicts between pedestrians, cyclists, and autos.
Parking	Yes	The study will review the Project's effect on the on-street parking conditions adjacent to the Project Site and ensure compliance with PWD's guidelines.
Curb Space Allocation	Yes	The study will review the proposed curb space allocation to ensure that the curb space is managed appropriately between passenger and commercial loading and parking, bus stop facilities, and bike and other alternative transportation mode parking while maintaining visibility at driveways.
Safety Analysis	Yes	The Project is not located on a high injury network (HIN) street, as identified in the Local Road Safety Plan (LRSP) or other analysis. The study will evaluate the adverse effect of the project and associated measures to enhance safety conditions. If it is determined that the project would have an adverse effect on a HIN corridor including intersections and road segments, the applicant shall work with the City's PWD to improve roadway safety at impacted locations for all users, including the design and construction of engineering measures and possibly safety education measures. The applicant shall also work with the City to confirm that the project does not inhibit future implementation of projects identified by the City in the LRSP. The LRSP will also be reviewed to determine if the project is located near a hot spot of collisions that involve people walking and bicycling. If this is the case, the applicant shall demonstrate how project features will not worsen the issue per the LRSP.

Notes:
[a] Based on *Culver City Transportation Study Criteria and Guidelines*, City of Culver City, July 2020.

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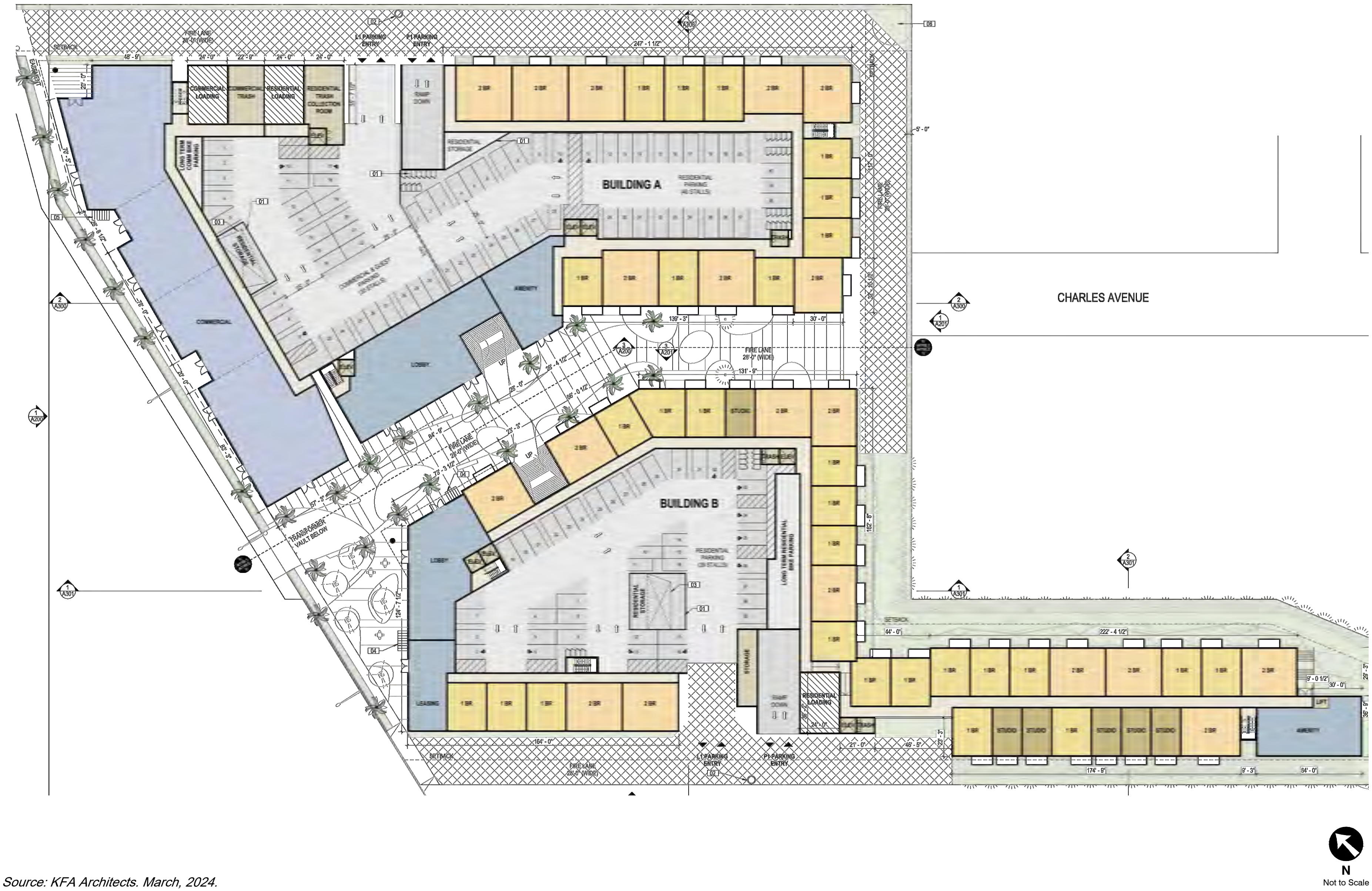

Source: KFA Architects. March, 2024.

PROJECT SITE PLAN

FIGURE 1

PROJECT SITE LOCATION

FIGURE 2

TABLE 2
PROJECT TRIP GENERATION ESTIMATES

Land Use	ITE Land Use	Size	Daily	Morning Peak Hour			Afternoon Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates [a]									
Multifamily Housing (Mid-Rise)	221	per du	4.54	23%	77%	0.37	61%	39%	0.39
Affordable Housing	223	per du	4.81	29%	71%	0.50	59%	41%	0.46
General Office Building	710	per ksf	10.84	88%	12%	1.52	17%	83%	1.44
High-Turnover (Sit-Down) Restaurant	932	per ksf	107.20	55%	45%	9.57	61%	39%	9.05
Proposed Project									
Multifamily Housing (Mid-Rise)	221	428 du	1,943	36	122	158	102	65	167
Transit/Walk-In Reduction - 10% [b]			*(194)*	*(4)*	*(12)*	*(16)*	*(10)*	*(7)*	*(17)*
Affordable Housing	223	80 du	385	12	28	40	22	15	37
Transit/Walk-In Reduction - 10% [b]			*(39)*	*(1)*	*(3)*	*(4)*	*(2)*	*(2)*	*(4)*
High-Turnover (Sit-Down) Restaurant	932	14.087 ksf	1,510	74	61	135	77	50	127
Internal Capture Reduction - 10% [c]			*(151)*	*(7)*	*(6)*	*(13)*	*(8)*	*(5)*	*(13)*
Transit/Walk-In Reduction - 10% [b]			*(136)*	*(7)*	*(6)*	*(13)*	*(7)*	*(5)*	*(12)*
Pass-By Trip Reduction - 20% [d]			*(245)*	*(12)*	*(10)*	*(22)*	*(12)*	*(8)*	*(20)*
Total Project Trips			**3,073**	**91**	**174**	**265**	**162**	**103**	**265**
Existing Land Uses									
General Office Building	710	160.438 ksf	1,739	215	29	244	39	192	231
Transit/Walk-In Reduction - 10% [b]			*(174)*	*(22)*	*(3)*	*(25)*	*(4)*	*(19)*	*(23)*
Total Existing Trips to be Removed			**1,565**	**193**	**26**	**219**	**35**	**173**	**208**
TOTAL - NET NEW PROJECT TRIPS			**1,508**	**(102)**	**148**	**46**	**127**	**(70)**	**57**

Notes:
ksf: 1,000 square feet, du: dwelling unit
[a] Source: AM and PM Peak Hour Rates: *Trip Generation, 11th Edition* , Institute of Transportation Engineers, 2021.
[b] The Project site is located within 0.25 miles of bus stops for several Culver CityBus lines. Therefore, a 10% transit reduction was applied to account for transit usage and walking visitor arrivals.
[c] Internal capture reductions account for person trips made between distinct land uses within a mixed-use development (i.e., between residential and retail).
[d] Pass-by reductions account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

TABLE 3
STUDY INTERSECTIONS

No	North/South Street	East/West Street	Existing Traffic Control
1.	Venice Boulevard	Girard Avenue	Signalized
2A.	Washington Boulevard	Girard Avenue	Signalized
2B.	Washington Boulevard	Elenda Street	Signalized
3.	Culver Boulevard	Elenda Street	Signalized
4A.	Washington Boulevard	Tilden Avenue	Signalized
4B.	Washington Boulevard	Washington Place	Signalized

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STUDY AREA AND ANALYZED INTERSECTIONS

FIGURE 3

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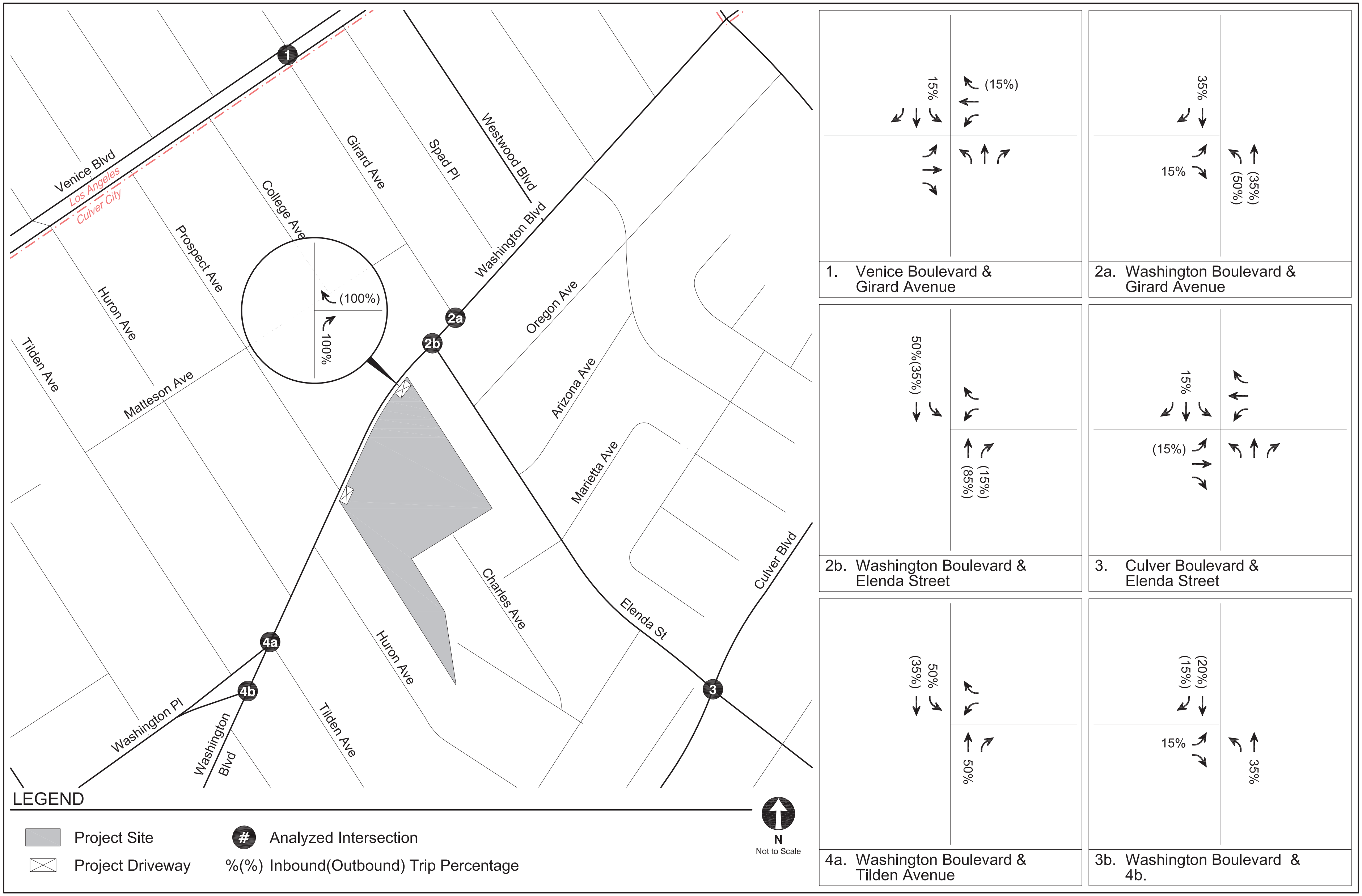
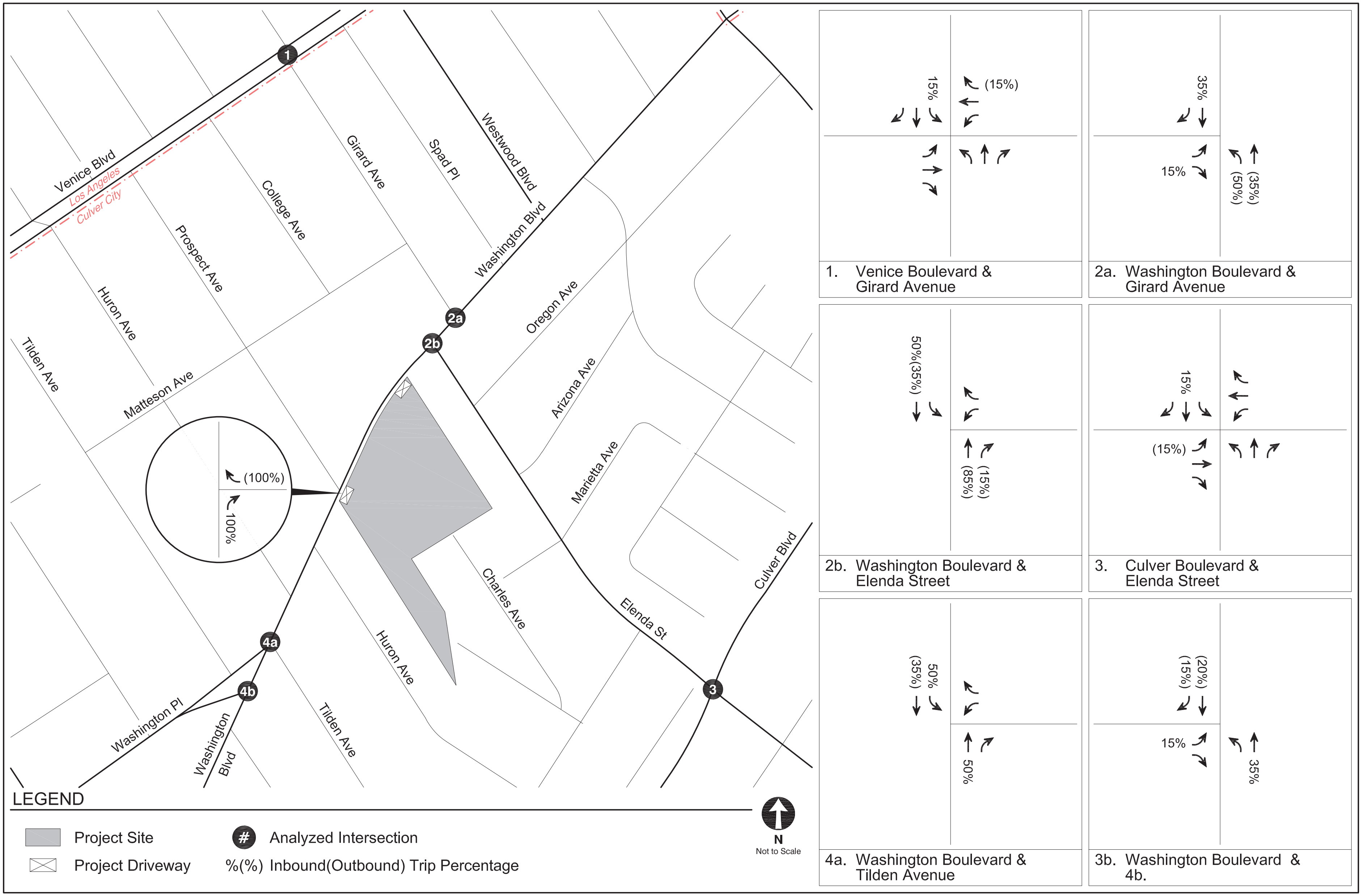


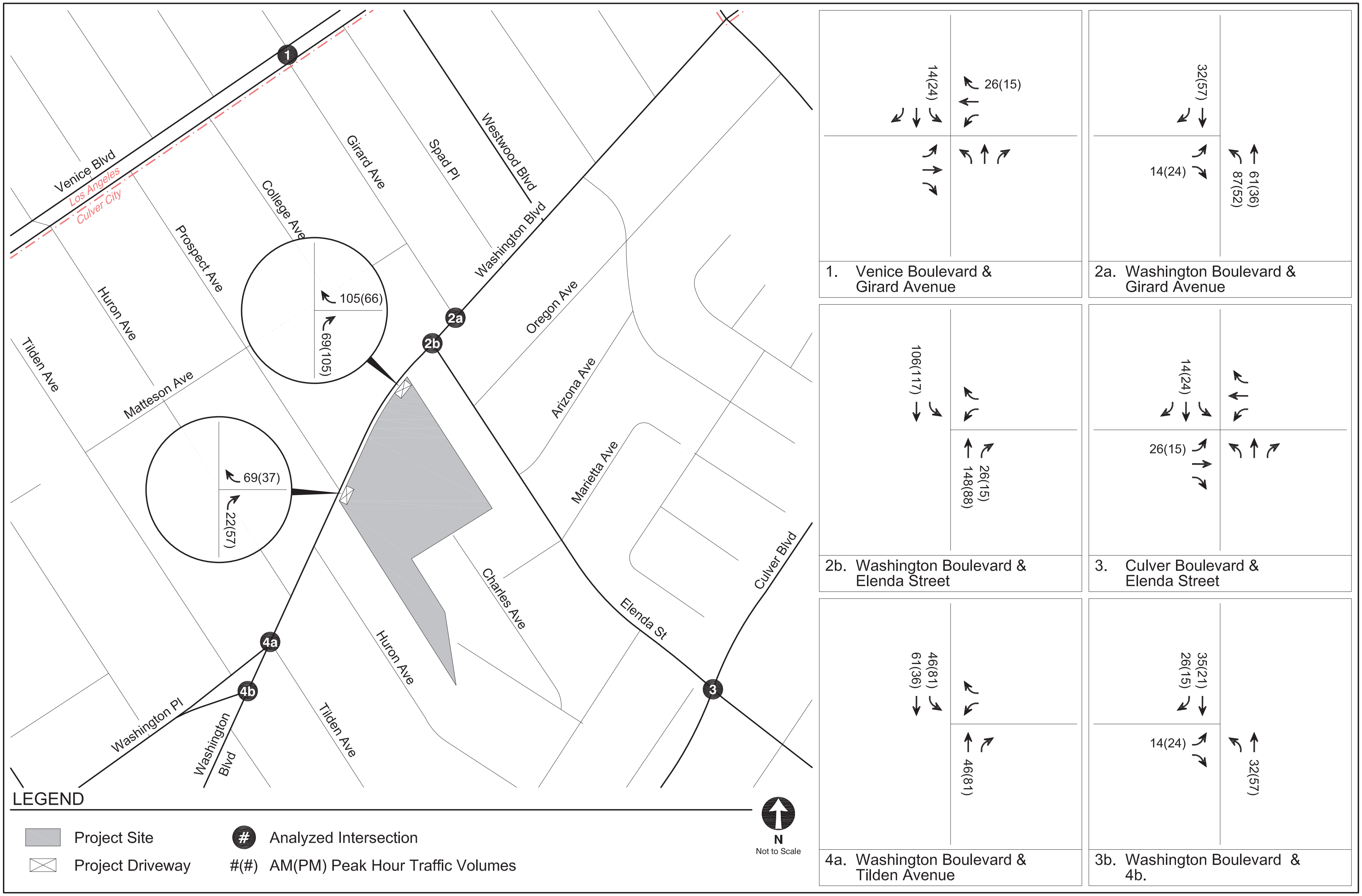
PROJECT TRIP DISTRIBUTION
BUILDING A

FIGURE
4A



PROJECT TRIP DISTRIBUTION
BUILDING B

FIGURE
4B



PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
5

TABLE 4
RELATED PROJECTS LIST

No.	Project [a]	Address	Use	Trip Generation						
				Daily	Morning Peak Hour			Afternoon Peak Hour		
					In	Out	Total	In	Out	Total
City of Culver City										
1. [b]	Wende Creative Community Center	10858-10860 Culver Boulevard	7,022 sf community center	202	9	4	13	8	10	18
2. [b]	New Assisted Living Facility	11141 Washington Boulevard	117-room assisted living	259	5	4	9	10	11	21
3. [b]	New Hotel	3868-3900 Sepulveda Boulevard	118 hotel rooms and 2,000 sf commercial	1,052	33	26	59	43	40	83
4. [c]	TGS CC Ventures	3800 Sepulveda Boulevard	3,824 sf dispensary	817	19	15	34	36	35	71
5. [b]	10510 Culver Boulevard	10510 Culver Boulevard	58,108 sf office	630	77	11	88	14	70	84
6. [b]	4319-4321 Sepulveda Boulevard	4319-4321 Sepulveda Boulevard	18 apartment units and 3,205 sf commercial	257	7	8	15	15	13	28
City of Los Angeles										
1.	New 6 Story Mixed-Use	10801 W. Venice Boulevard	85 apartment units and ground-floor retail	430	(5)	25	20	41	18	59
2. [b]	10626 W. Venice Boulevard	10626 W. Venice Boulevard	109 apartment units (11 affordable units) and 3,318 sf commercial	679	14	34	48	37	28	65
3. [b]	Washington-Motor Mixed-Use	10410-10417 W. Washington Boulevard	112 apartment units (15 affordable units) and 2,000 sf commercial	621	12	34	46	34	24	58
4.	Mixed-Use (Residential & Retail)	10375 W. Washington Boulevard	108 condominium units and 3,600 sf retail	579	(3)	35	32	31	11	42

Notes:
[a] Related Project information provided by the City of Culver City and City of Los Angeles in January 2024. Related Projects include developments within approximately 0.5 miles of the Project Site.
[b] Trip Generation estimates developed internally using *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021).
[c] Trip Generation estimates developed internally using *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2017).

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LOCATIONS OF RELATED PROJECTS

FIGURE 6

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PEDESTRIAN ATTRACTORS INVENTORY

FIGURE 7

Gibson transportation consulting, inc.

TRANSPORTATION FACILITIES

FIGURE 8

Culver CITY — VMT Tool

No analysis required. This project meets the screening criteria.

Project Name

10950 Washington Boulevard

Project Parcel Click here for parcel viewer

4208024002

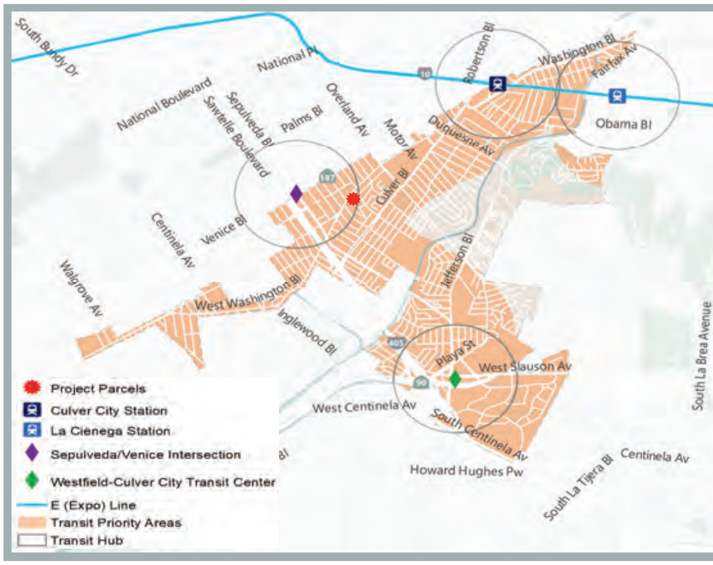
Project Screening

Apply to Full Project

Is this project within ½ mile of one of the following transit hubs? - Culver City Expo Station - La Cienega/Jefferson Expo Station - Westfield-Culver City Transit Center - Sepulveda/Venice intersection	Yes
Is the project located within any TPA and are at least 15% of the on-site residential units are affordable?	Yes
Does this project generate fewer than 250 daily trips?	N/A

Apply to Specific Land Uses

Is the retail component of project fewer than 50,000 square feet in size at every store?	No
Is this residential component of the project 100% affordable housing?	N/A



Project Daily Trips	N/A

Project Land Use ?

Residential	**Value (du)**
Single Family	
Multi-Family	428
Affordable Housing	
Family	80
Senior	
Special Needs	
Permanent Supportive	

Office	**Value (ksf)**
Standard	

Medical	**Value (ksf)**
Medical Office	
Hospital	

Industrial	**Value (ksf)**
Light Industrial	
Manufacturing	
Warehousing / Self-Storage	

Movie Studio	**Value (ksf)**
Office	
Post Production	
Stage	
Support	

The following land uses will require separate impact analysis (outside of this tool) if not screened out. Please leave the land uses in the table below if they are part of a mixed use project.

Retail	**Value (ksf)**
General	
Supermarket	
Bank	
Health Club	
Gas Station	
Auto Repair	
Home Improvement Superstore	
Free-Standing Discount	
Restaurant Non-fast-food	14.087
Restaurant Fast-food	
	Value (seats)
Theater w/ Matinee	

Hotel	**Value (rooms)**
Hotel	
Motel	

School	**Value (students)**
University	
High School	
Middle School	
Elementary	

Appendix B

Traffic Volume Data

WILTEC

Phone: (626) 564-1944 Fax: (626) 5

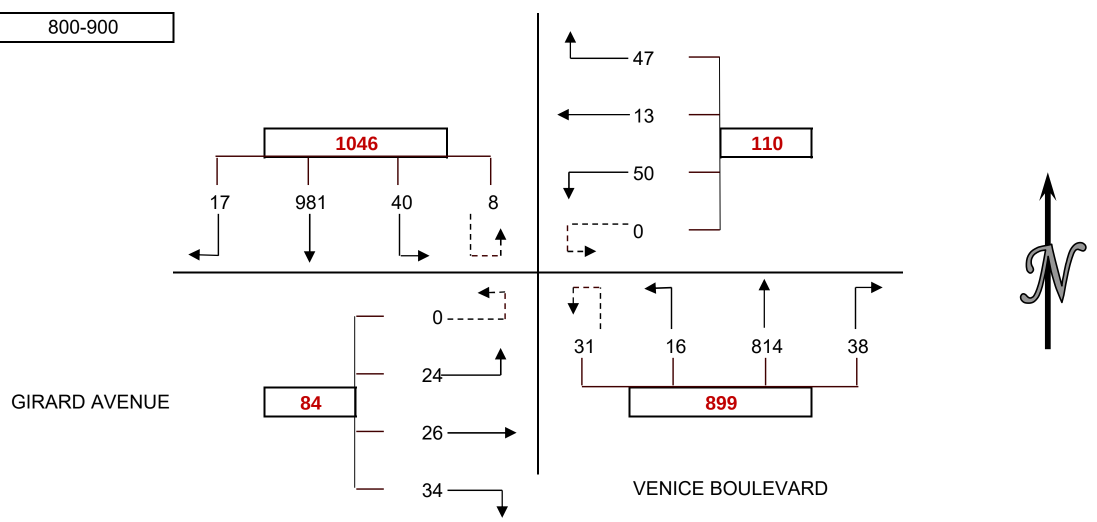
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		7:00 AM to 10:00 AM
INTERSECTION:	N/S	VENICE BOULEVARD
	E/W	GIRARD AVENUE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-715	1	192	2	3	1	1	3	0	1	112	3	6	5	2
715-730	4	229	8	1	3	2	4	0	5	153	2	7	9	4
730-745	2	263	10	2	4	0	4	0	8	133	4	7	9	3
745-800	4	291	9	2	1	2	6	0	15	139	5	12	6	11
800-815	3	254	10	4	10	4	11	0	8	170	3	5	10	7
815-830	6	225	10	1	8	5	14	0	11	194	5	4	4	6
830-845	3	270	12	1	18	1	15	0	11	231	6	8	6	5
845-900	5	232	8	2	11	3	10	0	8	219	2	14	14	8
900-915	3	244	5	4	5	2	8	0	8	188	3	11	8	3
915-930	6	208	6	3	5	0	8	0	4	203	1	6	5	5
930-945	3	222	8	1	2	2	12	0	7	175	1	8	7	3
945-1000	5	225	5	6	6	4	7	0	10	203	0	15	8	4
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-800	11	975	29	8	9	5	17	0	29	537	14	32	29	20
715-815	13	1037	37	9	18	8	25	0	36	595	14	31	34	25
730-830	15	1033	39	9	23	11	35	0	42	636	17	28	29	27
745-845	16	1040	41	8	37	12	46	0	45	734	19	29	26	29
800-900	17	981	40	8	47	13	50	0	38	814	16	31	34	26
815-915	17	971	35	8	42	11	47	0	38	832	16	37	32	22
830-930	17	954	31	10	39	6	41	0	31	841	12	39	33	21
845-945	17	906	27	10	23	7	38	0	27	785	7	39	34	19
900-1000	17	899	24	14	18	8	35	0	29	769	5	40	28	15

PEAK HOUR	800-900



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	2	3	4	3	12
715-730	2	2	0	7	11
730-745	4	3	4	6	17
745-800	1	2	2	12	17
800-815	6	3	7	5	21

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	2	0	4	6
715-730	0	1	1	4	6
730-745	1	1	2	3	7
745-800	2	0	1	1	4
800-815	0	1	1	1	3

815-830	2	4	8	11	25
830-845	2	7	6	2	17
845-900	4	2	2	11	19
900-915	2	5	1	8	16
915-930	8	6	3	8	25
930-945	6	4	5	11	26
945-1000	8	3	7	10	28
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	9	10	10	28	57
715-815	13	10	13	30	66
730-830	13	12	21	34	80
745-845	11	16	23	30	80
800-900	14	16	23	29	82

815-830	0	4	2	0	6
830-845	0	0	3	1	4
845-900	2	5	0	3	10
900-915	0	0	1	4	5
915-930	1	4	0	2	7
930-945	0	3	1	2	6
945-1000	1	5	1	0	7
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	3	4	4	12	23
715-815	3	3	5	9	20
730-830	3	6	6	5	20
745-845	2	5	7	3	17
800-900	2	10	6	5	23

WILTEC

Phone: (626) 564-1944 Fax: (626) 5

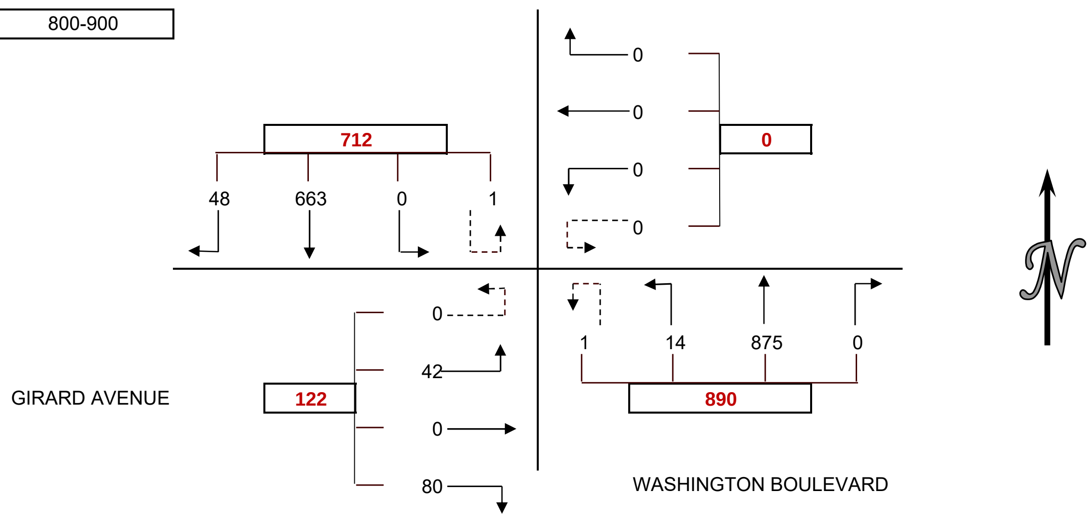
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		7:00 AM to 10:00 AM
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	GIRARD AVENUE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-715	0	64	0	0	0	0	0	0	0	145	0	0	2	0
715-730	5	100	0	0	0	0	0	0	0	167	1	0	6	0
730-745	5	127	0	0	0	0	0	0	0	200	2	0	8	0
745-800	2	147	0	0	0	0	0	0	0	207	3	0	12	0
800-815	9	158	0	1	0	0	0	0	0	213	1	0	14	0
815-830	16	169	0	0	0	0	0	0	0	222	2	0	13	0
830-845	17	180	0	0	0	0	0	0	0	228	4	1	39	0
845-900	6	156	0	0	0	0	0	0	0	212	7	0	14	0
900-915	9	139	0	0	0	0	0	0	0	210	3	1	10	0
915-930	2	117	0	0	0	0	0	0	0	183	1	1	7	0
930-945	3	125	0	0	0	0	0	0	0	174	4	0	2	0
945-1000	3	129	0	0	0	0	0	0	0	199	2	0	6	0
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-800	12	438	0	0	0	0	0	0	0	719	6	0	28	0
715-815	21	532	0	1	0	0	0	0	0	787	7	0	40	0
730-830	32	601	0	1	0	0	0	0	0	842	8	0	47	0
745-845	44	654	0	1	0	0	0	0	0	870	10	1	78	0
800-900	48	663	0	1	0	0	0	0	0	875	14	1	80	0
815-915	48	644	0	0	0	0	0	0	0	872	16	2	76	0
830-930	34	592	0	0	0	0	0	0	0	833	15	3	70	0
845-945	20	537	0	0	0	0	0	0	0	779	15	2	33	0
900-1000	17	510	0	0	0	0	0	0	0	766	10	2	25	0

PEAK HOUR	800-900



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	4	2	1	7
715-730	2	5	3	2	12
730-745	9	4	5	5	23
745-800	8	3	9	4	24
800-815	10	7	24	6	47

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	1	0	1	2
715-730	1	1	0	1	3
730-745	1	1	2	0	4
745-800	1	0	1	1	3
800-815	0	0	2	0	2

815-830	8	10	16	12	46
830-845	23	14	48	38	123
845-900	10	3	2	8	23
900-915	6	5	3	1	15
915-930	7	2	4	8	21
930-945	6	6	2	6	20
945-1000	12	0	2	6	20
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	19	16	19	12	66
715-815	29	19	41	17	106
730-830	35	24	54	27	140
745-845	49	34	97	60	240
800-900	51	34	90	64	239

815-830	0	1	3	1	5
830-845	7	2	4	1	14
845-900	1	1	2	0	4
900-915	1	0	0	1	2
915-930	0	1	0	0	1
930-945	1	1	0	1	3
945-1000	0	0	1	0	1
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	3	3	3	3	12
715-815	3	2	5	2	12
730-830	2	2	8	2	14
745-845	8	3	10	3	24
800-900	8	4	11	2	25

WILTEC

Phone: (626) 564-1944 Fax: (626) 5

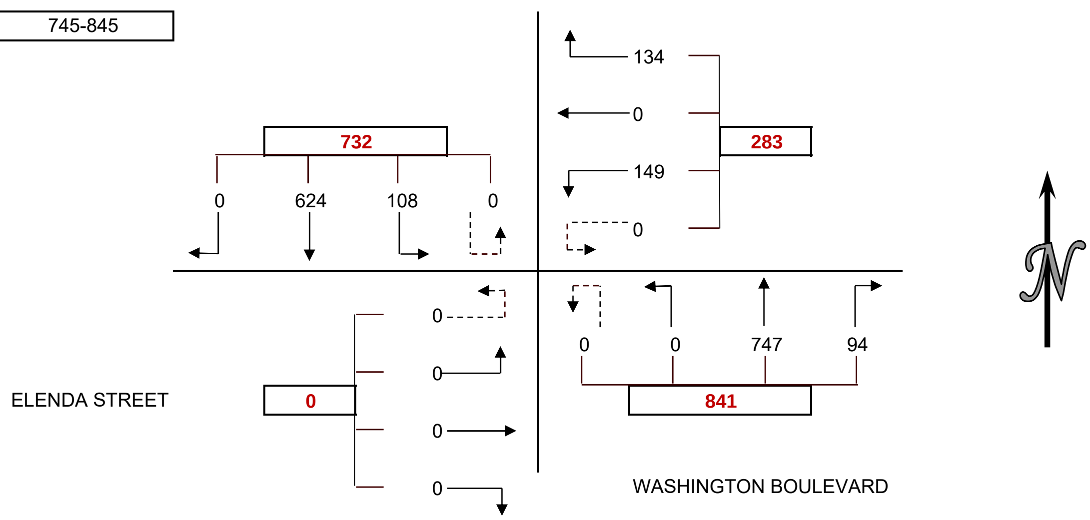
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING INC
PROJECT: CULVER CITY TRAFFIC COUNTS
DATE: WEDNESDAY JUNE 12, 2024
PERIOD: 7:00 AM to 10:00 AM
INTERSECTION: N/S WASHINGTON BOULEVARD
E/W ELENDA STREET
CITY: CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-715	0	58	8	0	12	0	8	0	10	133	0	0	0	0
715-730	0	93	13	0	15	0	14	0	10	153	0	0	0	0
730-745	0	114	21	0	35	0	42	0	33	167	0	0	0	0
745-800	0	129	30	0	29	0	40	0	32	181	0	0	0	0
800-815	0	131	41	0	31	0	42	0	32	183	0	0	0	0
815-830	0	158	24	0	44	0	42	0	14	180	0	0	0	0
830-845	0	206	13	0	30	0	25	0	16	203	0	0	0	0
845-900	0	150	20	0	20	0	12	0	15	199	0	0	0	0
900-915	0	136	13	0	21	0	20	0	13	193	0	0	0	0
915-930	0	109	15	0	14	0	16	0	14	171	0	1	0	0
930-945	0	112	15	0	36	0	21	0	11	142	0	0	0	0
945-1000	0	127	8	0	44	0	13	0	9	157	0	0	0	0
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-800	0	394	72	0	91	0	104	0	85	634	0	0	0	0
715-815	0	467	105	0	110	0	138	0	107	684	0	0	0	0
730-830	0	532	116	0	139	0	166	0	111	711	0	0	0	0
745-845	0	624	108	0	134	0	149	0	94	747	0	0	0	0
800-900	0	645	98	0	125	0	121	0	77	765	0	0	0	0
815-915	0	650	70	0	115	0	99	0	58	775	0	0	0	0
830-930	0	601	61	0	85	0	73	0	58	766	0	1	0	0
845-945	0	507	63	0	91	0	69	0	53	705	0	1	0	0
900-1000	0	484	51	0	115	0	70	0	47	663	0	1	0	0

PEAK HOUR	745-845



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	4	2	1	7
715-730	0	7	3	0	10
730-745	0	10	12	0	22
745-800	0	10	14	1	25
800-815	0	11	26	1	38

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	1	0	0	1
715-730	1	0	0	1	2
730-745	0	2	1	0	3
745-800	0	0	0	0	0
800-815	0	0	0	0	0

815-830	0	14	29	3	46
830-845	0	21	75	13	109
845-900	0	3	4	5	12
900-915	0	6	5	1	12
915-930	0	2	9	1	12
930-945	0	5	3	2	10
945-1000	0	3	7	0	10
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	0	31	31	2	64
715-815	0	38	55	2	95
730-830	0	45	81	5	131
745-845	0	56	144	18	218
800-900	0	49	134	22	205

815-830	0	0	2	0	2
830-845	0	1	2	0	3
845-900	0	1	1	0	2
900-915	0	0	0	0	0
915-930	0	1	0	0	1
930-945	1	1	0	0	2
945-1000	0	0	0	0	0
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	1	3	1	1	6
715-815	1	2	1	1	5
730-830	0	2	3	0	5
745-845	0	1	4	0	5
800-900	0	2	5	0	7

WILTEC

Phone: (626) 564-1944 Fax: (626) 5

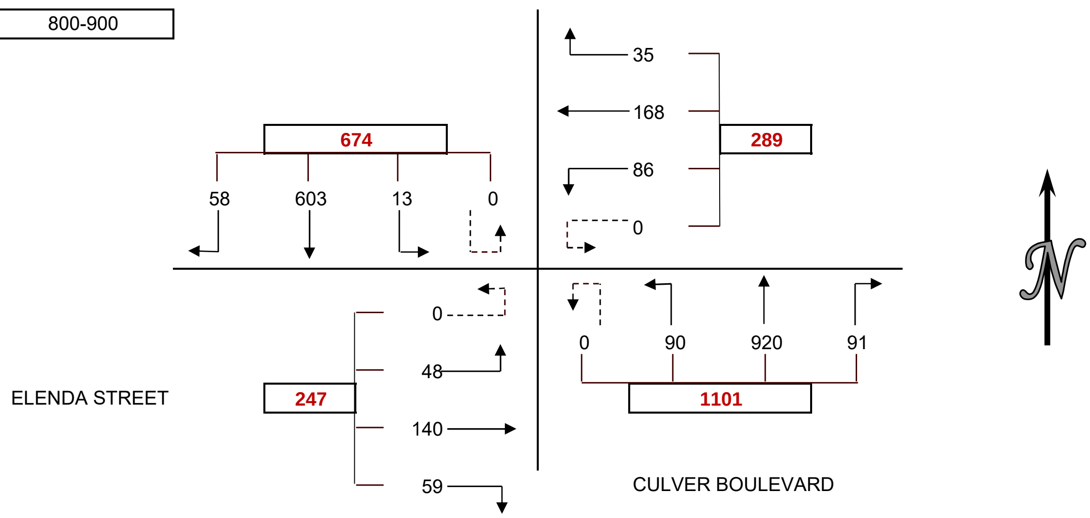
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		7:00 AM to 10:00 AM
INTERSECTION:	N/S	CULVER BOULEVARD
	E/W	ELENDA STREET
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-715	5	100	2	0	5	17	17	0	18	146	7	0	12	21
715-730	5	102	2	0	6	21	12	0	9	157	11	0	12	17
730-745	9	115	1	0	8	15	19	0	12	165	15	0	14	21
745-800	4	142	2	0	5	38	22	0	41	185	13	0	12	45
800-815	17	139	10	0	15	62	24	0	32	183	32	0	12	63
815-830	17	149	1	0	9	48	31	0	27	234	23	0	13	39
830-845	13	164	0	0	8	40	13	0	20	240	22	0	15	22
845-900	11	151	2	0	3	18	18	0	12	263	13	0	19	16
900-915	5	124	4	0	4	15	6	0	3	222	15	0	15	12
915-930	10	123	2	0	4	5	9	0	9	200	16	0	21	11
930-945	16	124	3	0	3	45	19	0	3	165	17	0	18	10
945-1000	9	106	3	1	5	25	21	0	10	160	21	0	8	5
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-800	23	459	7	0	24	91	70	0	80	653	46	0	50	104
715-815	35	498	15	0	34	136	77	0	94	690	71	0	50	146
730-830	47	545	14	0	37	163	96	0	112	767	83	0	51	168
745-845	51	594	13	0	37	188	90	0	120	842	90	0	52	169
800-900	58	603	13	0	35	168	86	0	91	920	90	0	59	140
815-915	46	588	7	0	24	121	68	0	62	959	73	0	62	89
830-930	39	562	8	0	19	78	46	0	44	925	66	0	70	61
845-945	42	522	11	0	14	83	52	0	27	850	61	0	73	49
900-1000	40	477	12	1	16	90	55	0	25	747	69	0	62	38

PEAK HOUR	800-900



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	4	4	8
715-730	2	1	3	5	11
730-745	4	2	7	9	22
745-800	5	6	24	4	39
800-815	8	2	23	7	40

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	0	1	1
715-730	0	1	1	1	3
730-745	0	1	3	0	4
745-800	1	2	0	1	4
800-815	1	0	3	1	5

815-830	2	2	22	5	31
830-845	1	2	9	8	20
845-900	6	6	4	5	21
900-915	0	3	6	2	11
915-930	1	0	5	2	8
930-945	1	8	14	1	24
945-1000	6	0	9	2	17
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	11	9	38	22	80
715-815	19	11	57	25	112
730-830	19	12	76	25	132
745-845	16	12	78	24	130
800-900	17	12	58	25	112

815-830	1	1	4	3	9
830-845	0	1	4	0	5
845-900	1	1	0	0	2
900-915	2	0	3	0	5
915-930	1	2	3	0	6
930-945	0	0	0	0	0
945-1000	2	0	0	0	2
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	1	4	4	3	12
715-815	2	4	7	3	16
730-830	3	4	10	5	22
745-845	3	4	11	5	23
800-900	3	3	11	4	21

WILTEC

Phone: (626) 564-1944 Fax: (626) 5

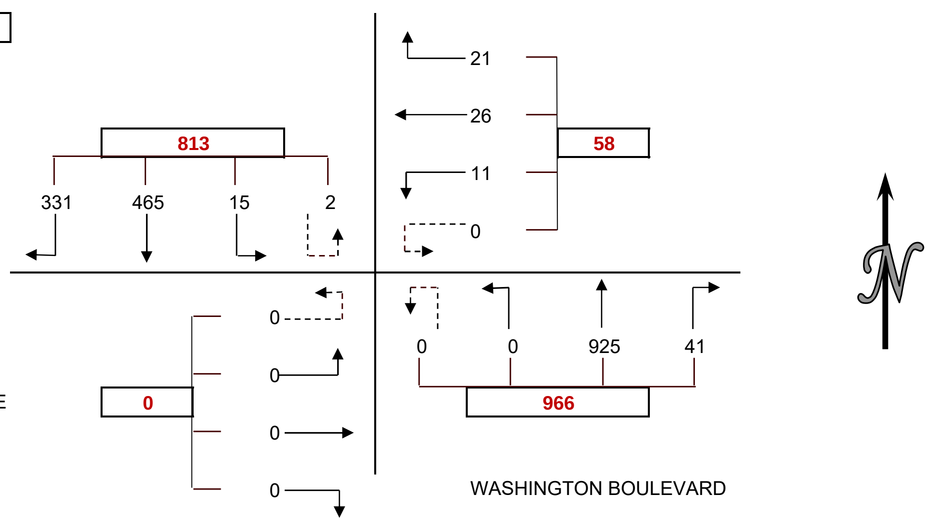
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		7:00 AM to 10:00 AM
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	TILDEN AVENUE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-715	35	46	0	0	0	0	0	0	1	70	0	0	0	0
715-730	50	49	0	0	3	1	0	0	4	101	0	0	0	0
730-745	70	77	5	0	0	4	3	0	3	162	0	0	0	0
745-800	66	85	4	0	6	2	1	0	7	200	0	0	0	0
800-815	86	91	0	0	6	7	0	0	8	214	0	0	0	0
815-830	78	111	7	0	2	7	3	0	7	203	0	0	0	0
830-845	93	111	3	0	7	5	3	0	12	293	0	0	0	0
845-900	74	152	5	2	6	7	5	0	14	215	0	0	0	0
900-915	69	90	4	0	4	4	2	0	14	185	0	0	0	0
915-930	48	78	5	0	7	0	1	0	6	207	0	0	0	0
930-945	59	74	0	1	7	2	3	0	9	133	0	0	0	0
945-1000	57	90	4	0	3	2	5	0	20	162	0	0	0	0
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-800	221	257	9	0	9	7	4	0	15	533	0	0	0	0
715-815	272	302	9	0	15	14	4	0	22	677	0	0	0	0
730-830	300	364	16	0	14	20	7	0	25	779	0	0	0	0
745-845	323	398	14	0	21	21	7	0	34	910	0	0	0	0
800-900	331	465	15	2	21	26	11	0	41	925	0	0	0	0
815-915	314	464	19	2	19	23	13	0	47	896	0	0	0	0
830-930	284	431	17	2	24	16	11	0	46	900	0	0	0	0
845-945	250	394	14	3	24	13	11	0	43	740	0	0	0	0
900-1000	233	332	13	1	21	8	11	0	49	687	0	0	0	0

PEAK HOUR	800-900



TILDEN AVENUE

WASHINGTON BOULEVARD

PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	3	0	5	8
715-730	0	3	1	3	7
730-745	0	5	2	5	12
745-800	0	6	9	8	23
800-815	0	7	6	13	26

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	0	3	3
715-730	0	0	0	0	0
730-745	0	0	0	2	2
745-800	0	0	0	1	1
800-815	0	0	0	2	2

815-830	0	4	3	5	12
830-845	0	15	6	9	30
845-900	0	4	6	2	12
900-915	0	8	0	1	9
915-930	0	4	1	2	7
930-945	0	6	7	4	17
945-1000	0	2	7	3	12
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	0	17	12	21	50
715-815	0	21	18	29	68
730-830	0	22	20	31	73
745-845	0	32	24	35	91
800-900	0	30	21	29	80

815-830	0	1	0	2	3
830-845	0	2	0	0	2
845-900	0	2	0	2	4
900-915	0	0	2	1	3
915-930	0	2	0	2	4
930-945	0	0	0	0	0
945-1000	0	0	0	0	0
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	0	0	0	6	6
715-815	0	0	0	5	5
730-830	0	1	0	7	8
745-845	0	3	0	5	8
800-900	0	5	0	6	11

WILTEC

Phone: (626) 564-1944 Fax: (626) 5

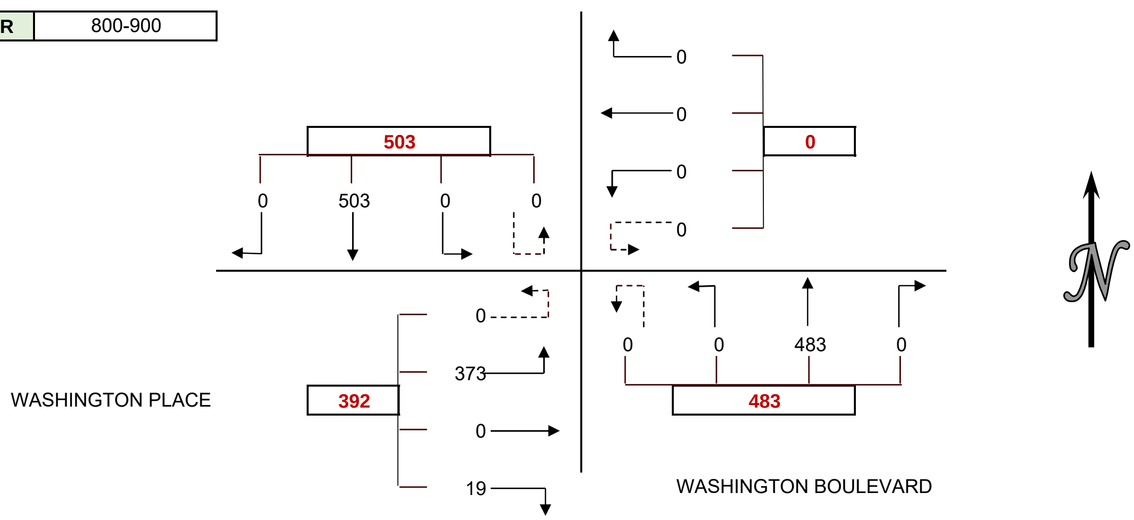
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		7:00 AM to 10:00 AM
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	WASHINGTON PLACE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-715	0	39	0	0	0	0	0	0	0	59	0	0	3	0
715-730	0	69	0	0	0	0	0	0	0	77	0	0	2	0
730-745	0	72	0	0	0	0	0	0	0	99	0	0	3	0
745-800	0	95	0	0	0	0	0	0	0	107	0	0	8	0
800-815	0	98	0	0	0	0	0	0	0	132	0	0	3	0
815-830	0	135	0	0	0	0	0	0	0	112	0	0	3	0
830-845	0	137	0	0	0	0	0	0	0	132	0	0	7	0
845-900	0	133	0	0	0	0	0	0	0	107	0	0	6	0
900-915	0	101	0	0	0	0	0	0	0	111	0	0	6	0
915-930	0	78	0	0	0	0	0	0	0	95	0	0	3	0
930-945	0	76	0	0	0	0	0	0	0	104	0	0	6	0
945-1000	0	103	0	0	0	0	0	0	0	93	0	0	12	0
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH
700-800	0	275	0	0	0	0	0	0	0	342	0	0	16	0
715-815	0	334	0	0	0	0	0	0	0	415	0	0	16	0
730-830	0	400	0	0	0	0	0	0	0	450	0	0	17	0
745-845	0	465	0	0	0	0	0	0	0	483	0	0	21	0
800-900	0	503	0	0	0	0	0	0	0	483	0	0	19	0
815-915	0	506	0	0	0	0	0	0	0	462	0	0	22	0
830-930	0	449	0	0	0	0	0	0	0	445	0	0	22	0
845-945	0	388	0	0	0	0	0	0	0	417	0	0	21	0
900-1000	0	358	0	0	0	0	0	0	0	403	0	0	27	0

PEAK HOUR	800-900



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	0	0	0
715-730	2	4	0	0	6
730-745	1	0	0	3	4
745-800	5	0	0	11	16
800-815	5	0	0	3	8

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	0	0	0
715-730	0	1	0	4	5
730-745	0	0	0	0	0
745-800	0	0	0	2	2
800-815	0	0	0	0	0

815-830	2	0	0	4	6
830-845	4	0	0	2	6
845-900	6	0	0	0	6
900-915	1	4	1	0	6
915-930	4	2	0	2	8
930-945	5	0	1	2	8
945-1000	9	0	0	0	9
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	8	4	0	14	26
715-815	13	4	0	17	34
730-830	13	0	0	21	34
745-845	16	0	0	20	36
800-900	17	0	0	9	26

815-830	0	0	0	1	1
830-845	0	0	0	0	0
845-900	0	0	0	0	0
900-915	2	1	0	0	3
915-930	0	0	0	0	0
930-945	0	0	0	0	0
945-1000	0	0	0	0	0
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
700-800	0	1	0	6	7
715-815	0	1	0	6	7
730-830	0	0	0	3	3
745-845	0	0	0	3	3
800-900	0	0	0	1	1

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

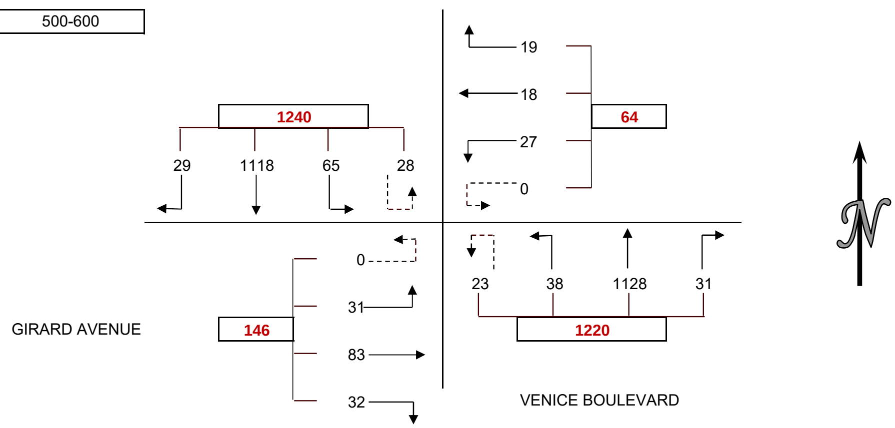
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		4:00 PM to 7:00 PM
INTERSECTION:	N/S	VENICE BOULEVARD
	E/W	GIRARD AVENUE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-415	9	270	12	4	4	7	6	0	10	280	6	10	5	14	5	0	642
415-430	5	235	19	5	10	5	4	0	6	238	7	7	3	21	7	0	572
430-445	5	235	18	3	5	4	7	0	3	282	11	11	2	16	5	0	607
445-500	8	247	14	7	10	8	5	0	12	267	6	3	11	16	5	0	619
500-515	5	280	18	5	3	2	11	0	10	285	7	4	7	15	8	0	660
515-530	11	289	13	13	5	8	4	0	6	287	11	5	8	28	10	0	698
530-545	9	278	12	3	4	3	2	0	7	283	9	9	8	17	6	0	650
545-600	4	271	22	7	7	5	10	0	8	273	11	5	9	23	7	0	662
600-615	8	289	15	6	2	3	4	0	6	269	9	8	10	12	11	0	652
615-630	7	274	11	12	3	3	5	0	12	298	7	9	7	10	12	0	670
630-645	8	246	8	7	2	3	10	0	7	304	3	11	5	10	8	0	632
645-700	9	217	12	10	6	5	4	0	5	245	4	7	9	6	6	0	545
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-500	27	987	63	19	29	24	22	0	31	1067	30	31	21	67	22	0	2440
415-515	23	997	69	20	28	19	27	0	31	1072	31	25	23	68	25	0	2458
430-530	29	1051	63	28	23	22	27	0	31	1121	35	23	28	75	28	0	2584
445-545	33	1094	57	28	22	21	22	0	35	1122	33	21	34	76	29	0	2627
500-600	29	1118	65	28	19	18	27	0	31	1128	38	23	32	83	31	0	2670
515-615	32	1127	62	29	18	19	20	0	27	1112	40	27	35	80	34	0	2662
530-630	28	1112	60	28	16	14	21	0	33	1123	36	31	34	62	36	0	2634
545-645	27	1080	56	32	14	14	29	0	33	1144	30	33	31	55	38	0	2616
600-700	32	1026	46	35	13	14	23	0	30	1116	23	35	31	38	37	0	2499

PEAK HOUR	500-600



PEDESTRIAN COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	12	2	4	12	30
415-430	10	5	4	11	30
430-445	4	10	5	13	32
445-500	4	5	5	8	22
500-515	3	6	8	18	35
515-530	6	3	4	18	31
530-545	3	7	8	10	28
545-600	8	7	7	18	40
600-615	6	7	9	13	35
615-630	9	4	5	9	27
630-645	5	4	7	10	26
645-700	5	5	3	13	26
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	30	22	18	44	114
415-515	21	26	22	50	119
430-530	17	24	22	57	120
445-545	16	21	25	54	116
500-600	20	23	27	64	134
515-615	23	24	28	59	134
530-630	26	25	29	50	130
545-645	28	22	28	50	128
600-700	25	20	24	45	114

BICYCLE COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	6	3	4	13
415-430	1	3	1	2	7
430-445	1	5	1	2	9
445-500	3	2	3	3	11
500-515	0	5	2	0	7
515-530	1	3	0	6	10
530-545	1	2	3	4	10
545-600	3	4	0	6	13
600-615	2	4	0	2	8
615-630	0	2	1	7	10
630-645	2	4	3	6	15
645-700	0	5	3	6	14
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	5	16	8	11	40
415-515	5	15	7	7	34
430-530	5	15	6	11	37
445-545	5	12	8	13	38
500-600	5	14	5	16	40
515-615	7	13	3	18	41
530-630	6	12	4	19	41
545-645	7	14	4	21	46
600-700	4	15	7	21	47

APPROACH SUMMARIES

	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
400-500	1096	1137		75	161		1159	1061		110	81
415-515	1109	1145		74	168		1159	1072		116	73
430-530	1171	1200		72	169		1210	1129		131	86
445-545	1212	1201		65	168		1211	1171		139	87
500-600	1240	1206		64	179		1220	1200		146	85
515-615	1250	1193		57	169		1206	1209		149	91
530-630	1228	1203		51	155		1223	1198		132	78
545-645	1195	1228		57	144		1240	1173		124	71
600-700	1139	1201		50	114		1204	1115		106	69

WILTEC Phone: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

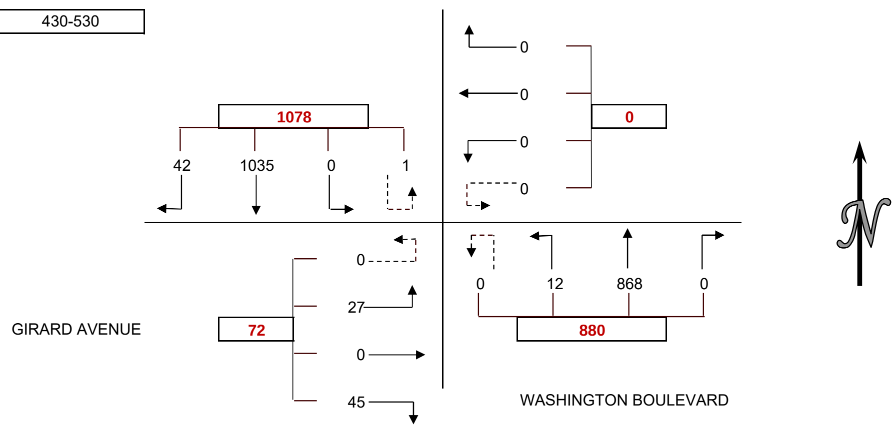
CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		4:00 PM to 7:00 PM
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	GIRARD AVENUE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-415	13	209	0	0	0	0	0	0	0	209	4	0	5	0	10	0	450
415-430	12	256	0	0	0	0	0	0	0	220	0	0	9	0	7	0	504
430-445	7	243	0	0	0	0	0	0	0	200	4	0	18	0	0	0	472
445-500	11	263	0	1	0	0	0	0	0	207	3	0	10	0	9	0	504
500-515	14	231	0	0	0	0	0	0	0	217	2	0	6	0	12	0	482
515-530	10	298	0	0	0	0	0	0	0	244	3	0	11	0	6	0	572
530-545	6	217	0	0	0	0	0	0	0	227	0	0	8	0	8	0	466
545-600	12	226	0	0	0	0	0	0	0	231	5	0	13	0	14	0	501
600-615	5	234	0	0	0	0	0	0	0	200	2	0	10	0	6	0	457
615-630	5	232	0	0	0	0	0	0	0	192	3	0	5	0	12	0	449
630-645	14	220	0	0	0	0	0	0	0	164	7	0	7	0	3	0	415
645-700	7	197	0	0	0	0	0	0	0	152	3	1	3	0	7	0	370

HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-500	43	971	0	1	0	0	0	0	0	836	11	0	42	0	26	0	1930
415-515	44	993	0	1	0	0	0	0	0	844	9	0	43	0	28	0	1962
430-530	42	1035	0	1	0	0	0	0	0	868	12	0	45	0	27	0	2030
445-545	41	1009	0	1	0	0	0	0	0	895	8	0	35	0	35	0	2024
500-600	42	972	0	0	0	0	0	0	0	919	10	0	38	0	40	0	2021
515-615	33	975	0	0	0	0	0	0	0	902	10	0	42	0	34	0	1996
530-630	28	909	0	0	0	0	0	0	0	850	10	0	36	0	40	0	1873
545-645	36	912	0	0	0	0	0	0	0	787	17	0	35	0	35	0	1822
600-700	31	883	0	0	0	0	0	0	0	708	15	1	25	0	28	0	1691

PEAK HOUR	430-530



PEDESTRIAN COUNTS					
15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	5	3	1	3	12
415-430	4	6	1	6	17
430-445	2	4	1	3	10
445-500	3	3	2	5	13
500-515	9	2	5	8	24
515-530	6	2	1	10	19
530-545	4	4	0	5	13
545-600	5	4	6	6	21
600-615	12	6	6	4	28
615-630	8	4	2	7	21
630-645	9	4	2	3	18
645-700	3	2	2	3	10
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	14	16	5	17	52
415-515	18	15	9	22	64
430-530	20	11	9	26	66
445-545	22	11	8	28	69
500-600	24	12	12	29	77
515-615	27	16	13	25	81
530-630	29	18	14	22	83
545-645	34	18	16	20	88
600-700	32	16	12	17	77

BICYCLE COUNTS					
15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	0	0	0	0
415-430	0	3	0	1	4
430-445	0	0	0	0	0
445-500	1	2	2	3	8
500-515	2	2	0	1	5
515-530	1	0	2	2	5
530-545	4	0	0	1	5
545-600	5	1	0	0	6
600-615	1	1	1	2	5
615-630	0	0	0	0	0
630-645	1	1	1	0	3
645-700	1	0	0	3	4
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	1	5	2	4	12
415-515	3	7	2	5	17
430-530	4	4	4	6	18
445-545	8	4	4	7	23
500-600	12	3	2	4	21
515-615	11	2	3	5	21
530-630	10	2	1	3	16
545-645	7	3	2	2	14
600-700	3	2	2	5	12

APPROACH SUMMARIES											
	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
400-500	1015	863		0	0		847	1013		68	54
415-515	1038	873		0	0		853	1036		71	53
430-530	1078	896		0	0		880	1080		72	54
445-545	1051	931		0	0		903	1044		70	49
500-600	1014	959		0	0		929	1010		78	52
515-615	1008	936		0	0		912	1017		76	43
530-630	937	890		0	0		860	945		76	38
545-645	948	822		0	0		804	947		70	53
600-700	914	736		0	0		724	909		53	46

WILTEC

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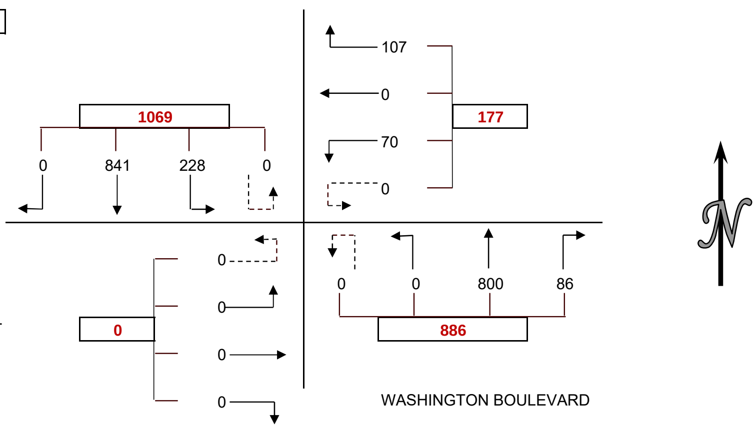
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		4:00 PM to 7:00 PM
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	ELENDA STREET
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-415	0	202	45	0	23	0	16	0	17	183	0	0	0	0	0	0	486
415-430	0	161	73	0	20	0	11	0	18	194	0	0	0	0	0	0	477
430-445	0	203	56	0	20	0	12	0	27	197	0	0	0	0	0	0	515
445-500	0	205	50	0	32	0	15	0	20	186	0	0	0	0	0	0	508
500-515	0	222	53	0	28	0	20	0	19	213	0	0	0	0	0	0	555
515-530	0	211	69	0	27	0	23	0	20	204	0	0	0	0	0	0	554
530-545	0	190	34	0	19	0	10	0	16	212	0	0	0	0	0	0	481
545-600	0	183	69	0	26	0	15	0	26	215	0	0	0	0	0	0	534
600-615	0	216	44	0	21	0	17	0	23	183	0	0	0	0	0	0	504
615-630	0	189	41	0	21	0	14	0	19	173	0	0	0	0	0	0	457
630-645	0	208	39	0	18	0	10	0	11	170	0	0	0	0	0	0	456
645-700	0	170	21	0	15	0	5	0	11	131	0	0	0	0	0	0	353
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-500	0	771	224	0	95	0	54	0	82	760	0	0	0	0	0	0	1986
415-515	0	791	232	0	100	0	58	0	84	790	0	0	0	0	0	0	2055
430-530	0	841	228	0	107	0	70	0	86	800	0	0	0	0	0	0	2132
445-545	0	828	206	0	106	0	68	0	75	815	0	0	0	0	0	0	2098
500-600	0	806	225	0	100	0	68	0	81	844	0	0	0	0	0	0	2124
515-615	0	800	216	0	93	0	65	0	85	814	0	0	0	0	0	0	2073
530-630	0	778	188	0	87	0	56	0	84	783	0	0	0	0	0	0	1976
545-645	0	796	193	0	86	0	56	0	79	741	0	0	0	0	0	0	1951
600-700	0	783	145	0	75	0	46	0	64	657	0	0	0	0	0	0	1770

PEAK HOUR 430-530



ELENDA STREET

PEDESTRIAN COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	2	4	0	6
415-430	0	8	4	8	20
430-445	0	5	4	3	12
445-500	0	2	2	1	5
500-515	0	5	9	2	16
515-530	0	2	5	4	11
530-545	0	7	0	0	7
545-600	0	5	11	4	20
600-615	0	7	8	7	22
615-630	0	6	2	6	14
630-645	0	5	3	3	11
645-700	0	3	5	2	10
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	0	17	14	12	43
415-515	0	20	19	14	53
430-530	0	14	20	10	44
445-545	0	16	16	7	39
500-600	0	19	25	10	54
515-615	0	21	24	15	60
530-630	0	25	21	17	63
545-645	0	23	24	20	67
600-700	0	21	18	18	57

BICYCLE COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	1	0	0	1
415-430	0	3	1	0	4
430-445	0	0	0	1	1
445-500	0	2	0	1	3
500-515	0	1	4	0	5
515-530	0	0	3	3	6
530-545	0	1	0	1	2
545-600	0	3	0	0	3
600-615	0	1	0	1	2
615-630	0	0	0	1	1
630-645	0	1	0	0	1
645-700	0	0	0	3	3
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	0	6	1	2	9
415-515	0	6	5	2	13
430-530	0	3	7	5	15
445-545	0	4	7	5	16
500-600	0	5	7	4	16
515-615	0	5	3	5	13
530-630	0	5	0	3	8
545-645	0	5	0	2	7
600-700	0	2	0	5	7

APPROACH SUMMARIES

	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
400-500	995	855		149	306		842	825		0	0
415-515	1023	890		158	316		874	849		0	0
430-530	1069	907		177	314		886	911		0	0
445-545	1034	921		174	281		890	896		0	0
500-600	1031	944		168	306		925	874		0	0
515-615	1016	907		158	301		899	865		0	0
530-630	966	870		143	272		867	834		0	0
545-645	989	827		142	272		820	852		0	0
600-700	928	732		121	209		721	829		0	0

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

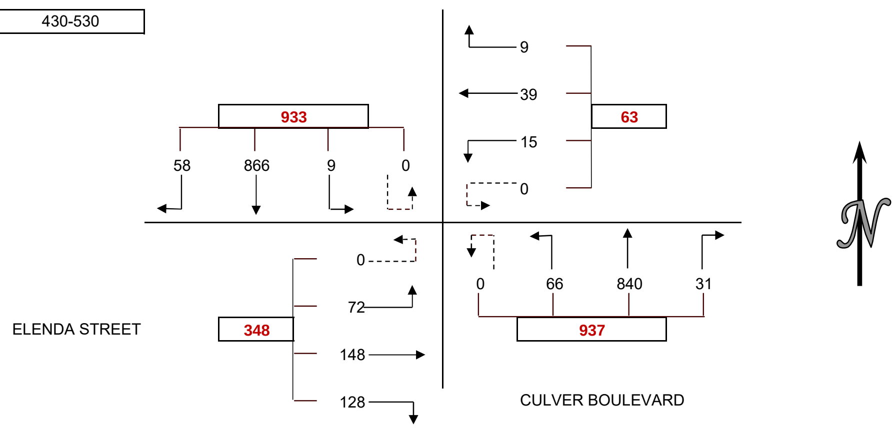
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		4:00 PM to 7:00 PM
INTERSECTION:	N/S	CULVER BOULEVARD
	E/W	ELENDA STREET
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-415	15	203	2	0	1	9	6	0	7	204	18	0	26	27	16	0	534
415-430	11	211	3	0	6	10	4	0	7	185	9	0	58	27	12	0	543
430-445	9	267	1	0	3	9	2	0	6	233	12	0	52	29	24	0	647
445-500	15	190	3	0	3	10	3	0	6	190	22	0	27	40	11	0	520
500-515	17	230	3	0	3	8	5	0	10	183	14	0	20	33	18	0	544
515-530	17	179	2	0	0	12	5	0	9	234	18	0	29	46	19	0	570
530-545	10	214	6	0	3	14	7	0	9	247	12	0	25	29	13	0	589
545-600	5	158	3	0	4	11	4	0	8	216	20	0	37	34	31	0	531
600-615	9	198	0	1	6	10	2	0	6	172	15	0	26	31	18	0	494
615-630	8	208	0	0	3	7	9	0	8	224	20	1	32	34	12	0	566
630-645	7	173	3	0	4	13	0	0	9	227	10	0	15	20	11	0	492
645-700	8	192	2	1	1	9	3	0	13	177	10	0	12	20	11	0	459
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-500	50	871	9	0	13	38	15	0	26	812	61	0	163	123	63	0	2244
415-515	52	898	10	0	15	37	14	0	29	791	57	0	157	129	65	0	2254
430-530	58	866	9	0	9	39	15	0	31	840	66	0	128	148	72	0	2281
445-545	59	813	14	0	9	44	20	0	34	854	66	0	101	148	61	0	2223
500-600	49	781	14	0	10	45	21	0	36	880	64	0	111	142	81	0	2234
515-615	41	749	11	1	13	47	18	0	32	869	65	0	117	140	81	0	2184
530-630	32	778	9	1	16	42	22	0	31	859	67	1	120	128	74	0	2180
545-645	29	737	6	1	17	41	15	0	31	839	65	1	110	119	72	0	2083
600-700	32	771	5	2	14	39	14	0	36	800	55	1	85	105	52	0	2011

PEAK HOUR	430-530



PEDESTRIAN COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	1	1	2	4
415-430	3	0	3	1	7
430-445	0	1	3	2	6
445-500	0	2	5	4	11
500-515	4	3	0	5	12
515-530	3	1	1	3	8
530-545	1	1	5	5	12
545-600	0	2	5	2	9
600-615	7	0	2	7	16
615-630	7	3	1	4	15
630-645	3	3	1	7	14
645-700	6	1	2	1	10
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	3	4	12	9	28
415-515	7	6	11	12	36
430-530	7	7	9	14	37
445-545	8	7	11	17	43
500-600	8	7	11	15	41
515-615	11	4	13	17	45
530-630	15	6	13	18	52
545-645	17	8	9	20	54
600-700	23	7	6	19	55

BICYCLE COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	3	0	2	5	10
415-430	0	1	3	1	5
430-445	0	1	0	0	1
445-500	3	1	1	1	6
500-515	0	1	1	1	3
515-530	1	0	4	1	6
530-545	3	1	2	2	8
545-600	2	0	1	1	4
600-615	0	2	1	1	4
615-630	0	0	1	2	3
630-645	2	0	3	1	6
645-700	0	0	0	1	1
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	6	3	6	7	22
415-515	3	4	5	3	15
430-530	4	3	6	3	16
445-545	7	3	8	5	23
500-600	6	2	8	5	21
515-615	6	3	8	5	22
530-630	5	3	5	6	19
545-645	4	2	6	5	17
600-700	2	2	5	5	14

APPROACH SUMMARIES

	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
400-500	930	888		66	158		899	1049		349	149
415-515	960	871		66	168		877	1069		351	146
430-530	933	921		63	188		937	1009		348	163
445-545	886	924		73	196		954	934		310	169
500-600	844	971		76	192		980	913		334	158
515-615	802	964		78	183		966	884		338	153
530-630	820	950		80	168		958	921		322	141
545-645	773	929		73	156		936	863		301	135
600-700	810	868		67	146		892	871		242	126

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	TILDEN AVENUE
CITY:		CULVER CITY

WILTEC Phone: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

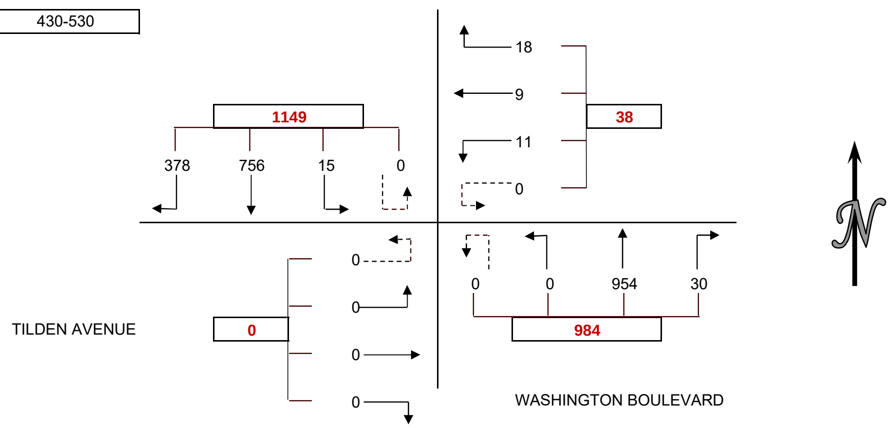
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT: GIBSON TRANSPORTATION CONSULTING INC
PROJECT: CULVER CITY TRAFFIC COUNTS
DATE: WEDNESDAY JUNE 12, 2024
PERIOD: 4:00 PM to 7:00 PM
INTERSECTION: N/S WASHINGTON BOULEVARD
E/W TILDEN AVENUE
CITY: CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-415	93	162	1	0	4	2	3	0	5	205	0	0	0	0	0	0	475
415-430	101	151	4	0	6	2	0	0	10	231	0	0	0	0	0	0	505
430-445	91	190	7	0	3	2	3	0	9	297	0	0	0	0	0	0	602
445-500	97	215	2	0	6	0	4	0	4	162	0	0	0	0	0	0	490
500-515	83	161	4	0	5	4	1	0	6	250	0	0	0	0	0	0	514
515-530	107	190	2	0	4	3	3	0	11	245	0	0	0	0	0	0	565
530-545	102	179	3	0	11	4	2	0	9	229	0	0	0	0	0	0	539
545-600	95	138	6	0	7	2	2	0	10	223	0	0	0	0	0	0	483
600-615	101	162	7	0	10	3	3	0	9	278	0	0	0	0	0	0	573
615-630	57	136	5	0	8	0	7	0	3	208	0	0	0	0	0	0	424
630-645	68	159	3	1	6	1	2	0	6	174	0	0	0	0	0	0	420
645-700	72	144	7	0	9	2	5	0	6	152	0	0	0	0	0	0	397
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-500	382	718	14	0	19	6	10	0	28	895	0	0	0	0	0	0	2072
415-515	372	717	17	0	20	8	8	0	29	940	0	0	0	0	0	0	2111
430-530	378	756	15	0	18	9	11	0	30	954	0	0	0	0	0	0	2171
445-545	389	745	11	0	26	11	10	0	30	886	0	0	0	0	0	0	2108
500-600	387	668	15	0	27	13	8	0	36	947	0	0	0	0	0	0	2101
515-615	405	669	18	0	32	12	10	0	39	975	0	0	0	0	0	0	2160
530-630	355	615	21	0	36	9	14	0	31	938	0	0	0	0	0	0	2019
545-645	321	595	21	1	31	6	14	0	28	883	0	0	0	0	0	0	1900
600-700	298	601	22	1	33	6	17	0	24	812	0	0	0	0	0	0	1814

PEAK HOUR	430-530



PEDESTRIAN COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	4	2	0	6
415-430	0	3	4	8	15
430-445	0	3	7	6	16
445-500	0	4	4	8	16
500-515	0	5	3	2	10
515-530	0	8	2	6	16
530-545	0	3	2	3	8
545-600	0	1	2	7	10
600-615	0	0	7	5	12
615-630	0	3	2	9	14
630-645	0	4	3	8	15
645-700	0	7	0	4	11
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	0	14	17	22	53
415-515	0	15	18	24	57
430-530	0	20	16	22	58
445-545	0	20	11	19	50
500-600	0	17	9	18	44
515-615	0	12	13	21	46
530-630	0	7	13	24	44
545-645	0	8	14	29	51
600-700	0	14	12	26	52

BICYCLE COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	0	2	2	4
415-430	0	2	0	1	3
430-445	0	0	1	0	1
445-500	0	0	0	4	4
500-515	0	3	0	0	3
515-530	0	0	1	1	2
530-545	0	1	1	1	3
545-600	0	4	0	2	6
600-615	0	2	0	0	2
615-630	0	0	1	0	1
630-645	0	0	1	1	2
645-700	0	1	0	4	5
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	0	2	3	7	12
415-515	0	5	1	5	11
430-530	0	3	2	5	10
445-545	0	4	2	6	12
500-600	0	8	2	4	14
515-615	0	7	2	4	13
530-630	0	7	2	3	12
545-645	0	6	2	3	11
600-700	0	3	2	5	10

APPROACH SUMMARIES

	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
400-500	1114	914		35	42		923	728		0	388
415-515	1106	960		36	46		969	725		0	380
430-530	1149	972		38	45		984	767		0	387
445-545	1145	912		47	41		916	755		0	400
500-600	1070	974		48	51		983	676		0	400
515-615	1092	1007		54	57		1014	679		0	417
530-630	991	974		59	52		969	629		0	364
545-645	938	915		51	49		911	609		0	327
600-700	922	846		56	46		836	618		0	304

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	WASHINGTON PLACE
CITY:		CULVER CITY

WILTEC

Phone: (626) 564-1944   Fax: (626) 564-0969   info@wiltecusa.com

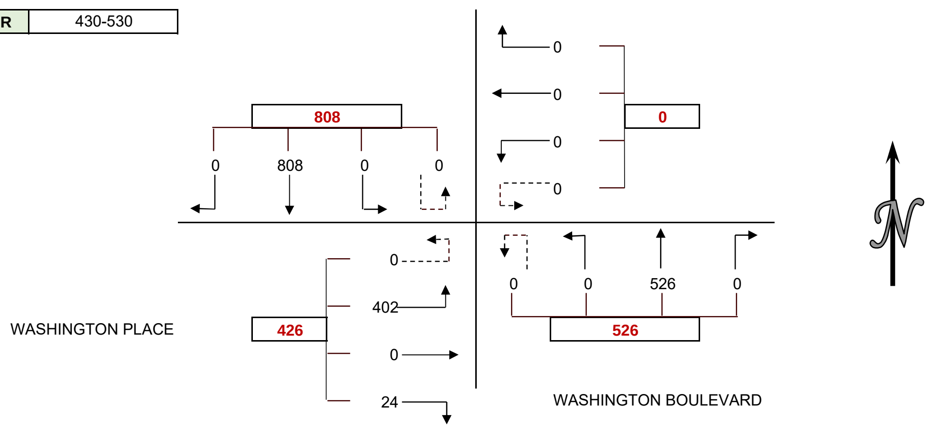
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		4:00 PM to 7:00 PM
INTERSECTION:	N/S	WASHINGTON BOULEVARD
	E/W	WASHINGTON PLACE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-415	0	172	0	0	0	0	0	0	0	139	0	0	8	0	94	0	413
415-430	0	158	0	0	0	0	0	0	0	126	0	0	11	0	120	0	415
430-445	0	178	0	0	0	0	0	0	0	131	0	0	4	0	92	0	405
445-500	0	223	0	0	0	0	0	0	0	129	0	0	3	0	83	0	438
500-515	0	206	0	0	0	0	0	0	0	146	0	0	9	0	103	0	464
515-530	0	201	0	0	0	0	0	0	0	120	0	0	8	0	124	0	453
530-545	0	145	0	0	0	0	0	0	0	143	0	0	3	0	106	0	397
545-600	0	134	0	0	0	0	0	0	0	140	0	0	6	0	101	0	381
600-615	0	170	0	0	0	0	0	0	0	131	0	0	4	0	103	0	408
615-630	0	140	0	0	0	0	0	0	0	137	0	0	8	0	87	0	372
630-645	0	175	0	0	0	0	0	0	0	117	0	0	4	0	71	0	367
645-700	0	130	0	0	0	0	0	0	0	126	0	0	3	0	72	0	331
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-500	0	731	0	0	0	0	0	0	0	525	0	0	26	0	389	0	1671
415-515	0	765	0	0	0	0	0	0	0	532	0	0	27	0	398	0	1722
430-530	0	808	0	0	0	0	0	0	0	526	0	0	24	0	402	0	1760
445-545	0	775	0	0	0	0	0	0	0	538	0	0	23	0	416	0	1752
500-600	0	686	0	0	0	0	0	0	0	549	0	0	26	0	434	0	1695
515-615	0	650	0	0	0	0	0	0	0	534	0	0	21	0	434	0	1639
530-630	0	589	0	0	0	0	0	0	0	551	0	0	21	0	397	0	1558
545-645	0	619	0	0	0	0	0	0	0	525	0	0	22	0	362	0	1528
600-700	0	615	0	0	0	0	0	0	0	511	0	0	19	0	333	0	1478

PEAK HOUR	430-530



PEDESTRIAN COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	2	2	0	2	6
415-430	1	3	0	3	7
430-445	3	10	0	0	13
445-500	0	2	0	0	2
500-515	1	1	0	2	4
515-530	1	9	0	3	13
530-545	3	8	0	2	13
545-600	6	11	0	1	18
600-615	0	6	0	1	7
615-630	2	0	0	1	3
630-645	2	1	0	2	5
645-700	0	5	0	2	7
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	6	17	0	5	28
415-515	5	16	0	5	26
430-530	5	22	0	5	32
445-545	5	20	0	7	32
500-600	11	29	0	8	48
515-615	10	34	0	7	51
530-630	11	25	0	5	41
545-645	10	18	0	5	33
600-700	4	12	0	6	22

BICYCLE COUNTS

15 MIN COUNTS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-415	0	0	0	0	0
415-430	2	3	0	0	5
430-445	0	0	0	0	0
445-500	0	1	0	1	2
500-515	0	1	0	0	1
515-530	0	0	0	0	0
530-545	0	1	0	0	1
545-600	1	1	0	0	2
600-615	0	3	0	0	3
615-630	0	0	0	0	0
630-645	1	0	0	1	2
645-700	0	1	0	1	2
HOUR TOTALS PERIOD	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	TOTAL
400-500	2	4	0	1	7
415-515	2	5	0	1	8
430-530	0	2	0	1	3
445-545	0	3	0	1	4
500-600	1	3	0	0	4
515-615	1	5	0	0	6
530-630	1	5	0	0	6
545-645	2	4	0	1	7
600-700	1	4	0	2	7

APPROACH SUMMARIES

	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
400-500	731	914		0	0		525	757		415	0
415-515	765	930		0	0		532	792		425	0
430-530	808	928		0	0		526	832		426	0
445-545	775	954		0	0		538	798		439	0
500-600	686	983		0	0		549	712		460	0
515-615	650	968		0	0		534	671		455	0
530-630	589	948		0	0		551	610		418	0
545-645	619	887		0	0		525	641		384	0
600-700	615	844		0	0		511	634		352	0

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

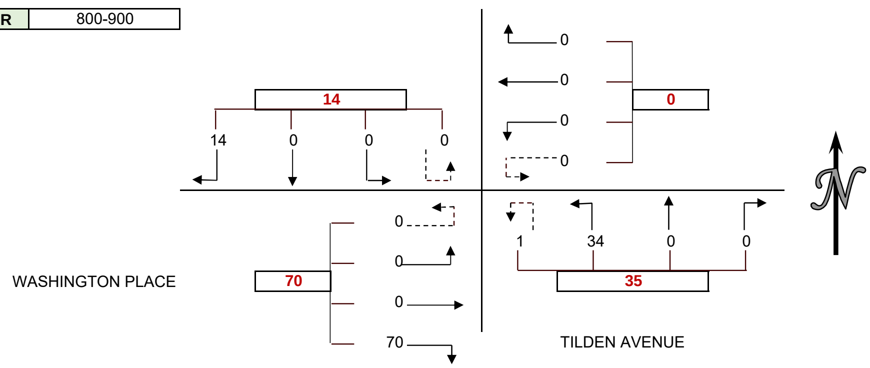
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		7:00 AM to 10:00 AM
INTERSECTION:	N/S	TILDEN AVENUE
	E/W	WASHINGTON PLACE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
700-715	5	0	0	0	0	0	0	0	0	0	4	0	5	0	0	0	14
715-730	2	0	0	0	0	0	0	0	0	0	5	0	13	0	0	0	20
730-745	3	0	0	0	0	0	0	0	0	0	6	0	16	0	0	0	25
745-800	3	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	18
800-815	7	0	0	0	0	0	0	0	0	0	9	1	15	0	0	0	32
815-830	2	0	0	0	0	0	0	0	0	0	11	0	9	0	0	0	22
830-845	2	0	0	0	0	0	0	0	0	0	8	0	24	0	0	0	34
845-900	3	0	0	0	0	0	0	0	0	0	6	0	22	0	0	0	31
900-915	4	0	0	0	0	0	0	0	0	0	4	0	12	0	0	0	20
915-930	0	0	0	0	0	0	0	0	0	0	2	0	11	0	0	0	13
930-945	2	0	0	0	0	0	0	0	0	0	7	0	15	0	0	0	24
945-1000	2	0	0	0	0	0	0	0	0	0	4	0	10	0	0	0	16
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
700-800	13	0	0	0	0	0	0	0	0	0	15	0	49	0	0	0	77
715-815	15	0	0	0	0	0	0	0	0	0	20	1	59	0	0	0	95
730-830	15	0	0	0	0	0	0	0	0	0	26	1	55	0	0	0	97
745-845	14	0	0	0	0	0	0	0	0	0	28	1	63	0	0	0	106
800-900	14	0	0	0	0	0	0	0	0	0	34	1	70	0	0	0	119
815-915	11	0	0	0	0	0	0	0	0	0	29	0	67	0	0	0	107
830-930	9	0	0	0	0	0	0	0	0	0	20	0	69	0	0	0	98
845-945	9	0	0	0	0	0	0	0	0	0	19	0	60	0	0	0	88
900-1000	8	0	0	0	0	0	0	0	0	0	17	0	48	0	0	0	73

PEAK HOUR	800-900



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	0	0	0
715-730	0	0	0	2	2
730-745	0	0	0	3	3
745-800	0	0	0	14	14
800-815	0	0	0	18	18
815-830	0	0	0	6	6
830-845	0	0	0	2	2
845-900	0	0	0	2	2
900-915	0	0	0	2	2
915-930	0	0	0	5	5
930-945	0	0	0	5	5
945-1000	0	0	0	3	3
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	0	0	0	19	19
715-815	0	0	0	37	37
730-830	0	0	0	41	41
745-845	0	0	0	40	40
800-900	0	0	0	28	28
815-915	0	0	0	12	12
830-930	0	0	0	11	11
845-945	0	0	0	14	14
900-1000	0	0	0	15	15

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	0	0	0
715-730	0	0	0	0	0
730-745	0	0	0	2	2
745-800	0	0	0	0	0
800-815	0	0	0	0	0
815-830	0	0	0	2	2
830-845	0	0	0	2	2
845-900	0	0	0	2	2
900-915	0	0	0	0	0
915-930	0	0	0	2	2
930-945	0	0	0	0	0
945-1000	0	0	0	0	0
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	0	0	0	2	2
715-815	0	0	0	2	2
730-830	0	0	0	4	4
745-845	0	0	0	4	4
800-900	0	0	0	6	6
815-915	0	0	0	6	6
830-930	0	0	0	6	6
845-945	0	0	0	4	4
900-1000	0	0	0	2	2

APPROACH SUMMARIES

	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
700-800	13	0		0	0		15	49		49	28
715-815	15	0		0	0		21	60		59	35
730-830	15	0		0	0		27	56		55	41
745-845	14	0		0	0		29	64		63	42
800-900	14	0		0	0		35	71		70	48
815-915	11	0		0	0		29	67		67	40
830-930	9	0		0	0		20	69		69	29
845-945	9	0		0	0		19	60		60	28
900-1000	8	0		0	0		17	48		48	25

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

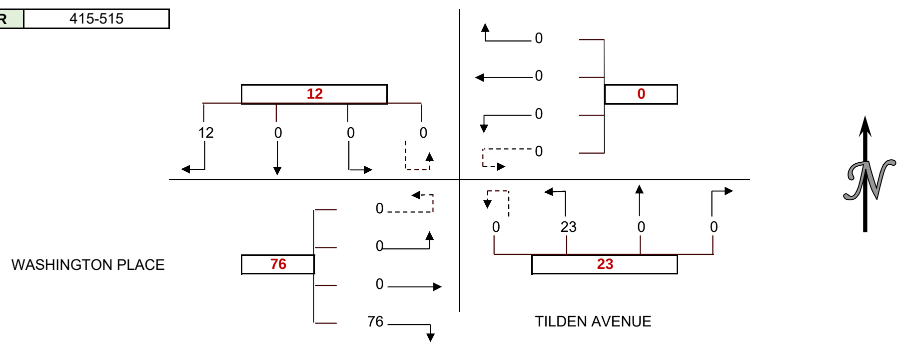
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING INC
PROJECT:		CULVER CITY TRAFFIC COUNTS
DATE:		WEDNESDAY JUNE 12, 2024
PERIOD:		4:00 PM to 7:00 PM
INTERSECTION:	N/S	TILDEN AVENUE
	E/W	WASHINGTON PLACE
CITY:		CULVER CITY

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-415	1	0	0	0	0	0	0	0	0	0	7	0	16	0	0	0	24
415-430	5	0	0	0	0	0	0	0	0	0	9	0	23	0	0	0	37
430-445	3	0	0	0	0	0	0	0	0	0	4	0	16	0	0	0	23
445-500	0	0	0	0	0	0	0	0	0	0	4	0	17	0	0	0	21
500-515	4	0	0	0	0	0	0	0	0	0	6	0	20	0	0	0	30
515-530	0	0	0	0	0	0	0	0	0	0	8	0	20	0	0	0	28
530-545	2	0	0	0	0	0	0	0	0	0	7	0	10	0	0	0	19
545-600	0	0	0	0	0	0	0	0	0	0	3	0	15	0	0	0	18
600-615	4	0	0	0	0	0	0	0	0	0	7	0	10	0	0	0	21
615-630	1	0	0	0	0	0	0	0	0	0	2	0	14	0	0	0	17
630-645	1	0	0	0	0	0	0	0	0	0	3	0	13	0	0	0	17
645-700	1	0	0	0	0	0	0	0	0	0	4	0	8	0	0	0	13
HOUR TOTALS	1	2	3	3U	4	5	6	6U	7	8	9	9U	10	11	12	12U	
PERIOD	SBRT	SBTH	SBLT	SBUT	WBRT	WBTH	WBLT	WBUT	NBRT	NBTH	NBLT	NBUT	EBRT	EBTH	EBLT	EBUT	TOTAL
400-500	9	0	0	0	0	0	0	0	0	0	24	0	72	0	0	0	105
415-515	12	0	0	0	0	0	0	0	0	0	23	0	76	0	0	0	111
430-530	7	0	0	0	0	0	0	0	0	0	22	0	73	0	0	0	102
445-545	6	0	0	0	0	0	0	0	0	0	25	0	67	0	0	0	98
500-600	6	0	0	0	0	0	0	0	0	0	24	0	65	0	0	0	95
515-615	6	0	0	0	0	0	0	0	0	0	25	0	55	0	0	0	86
530-630	7	0	0	0	0	0	0	0	0	0	19	0	49	0	0	0	75
545-645	6	0	0	0	0	0	0	0	0	0	15	0	52	0	0	0	73
600-700	7	0	0	0	0	0	0	0	0	0	16	0	45	0	0	0	68

PEAK HOUR	415-515



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-415	0	0	0	3	3
415-430	0	0	0	11	11
430-445	0	0	0	9	9
445-500	0	0	0	6	6
500-515	0	0	0	3	3
515-530	0	0	0	4	4
530-545	0	0	0	7	7
545-600	0	0	0	5	5
600-615	0	0	0	8	8
615-630	0	0	0	5	5
630-645	0	0	0	4	4
645-700	0	0	0	6	6
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-500	0	0	0	29	29
415-515	0	0	0	29	29
430-530	0	0	0	22	22
445-545	0	0	0	20	20
500-600	0	0	0	19	19
515-615	0	0	0	24	24
530-630	0	0	0	25	25
545-645	0	0	0	22	22
600-700	0	0	0	23	23

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-415	0	0	0	2	2
415-430	0	0	0	4	4
430-445	0	0	0	0	0
445-500	0	0	0	3	3
500-515	0	0	0	2	2
515-530	0	0	0	1	1
530-545	0	0	0	1	1
545-600	0	0	0	2	2
600-615	0	0	0	0	0
615-630	0	0	0	0	0
630-645	0	0	0	5	5
645-700	0	0	0	3	3
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-500	0	0	0	9	9
415-515	0	0	0	9	9
430-530	0	0	0	6	6
445-545	0	0	0	7	7
500-600	0	0	0	6	6
515-615	0	0	0	4	4
530-630	0	0	0	3	3
545-645	0	0	0	7	7
600-700	0	0	0	8	8

APPROACH SUMMARIES

	NORTH APRCH			EAST APRCH			SOUTH APRCH			WEST APRCH	
	APRCH	EXIT		APRCH	EXIT		APRCH	EXIT		APRCH	EXIT
400-500	9	0		0	0		24	72		72	33
415-515	12	0		0	0		23	76		76	35
430-530	7	0		0	0		22	73		73	29
445-545	6	0		0	0		25	67		67	31
500-600	6	0		0	0		24	65		65	30
515-615	6	0		0	0		25	55		55	31
530-630	7	0		0	0		19	49		49	26
545-645	6	0		0	0		15	52		52	21
600-700	7	0		0	0		16	45		45	23

Turning Movement Count Report AM

Location ID: 6
North/South: Prospect Ave
East/West: Washington Blvd

Date: 02/25/25
City: Culver City, 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	5	0	0	3	96	0	0	0	0	0	95	8	207
7:15	4	0	3	3	136	0	0	0	0	0	127	8	281
7:30	6	0	2	7	195	0	0	0	0	0	148	16	374
7:45	17	0	8	14	224	0	0	0	0	0	208	26	497
8:00	15	0	2	24	253	1	0	0	0	0	231	13	539
8:15	18	0	6	28	201	2	0	0	0	0	253	18	526
8:30	21	0	0	22	221	1	0	0	0	0	283	44	592
8:45	15	0	2	6	217	0	0	0	0	0	232	6	478

Total Volume:	101	0	23	107	1543	4	0	0	0	0	1577	139	3494
Approach %	81%	0%	19%	6%	93%	0%	0%	0%	0%	0%	92%	8%	

Peak Hr Begin:	7:45												
PHV	71	0	16	88	899	4	0	0	0	0	975	101	2154
PHF	0.870			0.891			0.000			0.823			

Prepared by City Count, LLC. (www.citycount.com)

Turning Movement Count Report PM

Location ID: 6
North/South: Prospect Ave
East/West: Washington Blvd

Date: 02/25/25
City: Culver City, 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	
16:00	16	0	2	11	280	0	0	0	0	0	240	12	561
16:15	20	0	3	6	261	0	0	0	0	0	223	13	526
16:30	6	0	3	6	291	0	0	0	0	0	244	14	564
16:45	14	0	2	8	325	0	0	0	0	0	250	11	610
17:00	11	0	0	10	288	0	0	0	0	0	256	11	576
17:15	16	0	0	8	315	0	0	0	0	0	272	10	621
17:30	13	0	3	4	279	0	0	0	0	0	292	28	619
17:45	17	0	1	5	271	0	0	0	0	0	231	10	535

Total Volume:	113	0	14	58	2310	0	0	0	0	0	2008	109	4612
Approach %	89%	0%	11%	2%	98%	0%	0%	0%	0%	0%	95%	5%	

Peak Hr Begin:	16:45												
PHV	54	0	5	30	1207	0	0	0	0	0	1070	60	2426
PHF	0.922			0.929			0.000			0.883			

Pedestrian/Bicycle Count Report

Location ID: 6
North/South: Prospect Ave
East/West: Washington Blvd

Date: 02/25/25
City: Culver City, CA

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	5	0	0	0	3	0	0	0
7:15	2	0	0	0	3	0	0	0
7:30	1	0	0	0	8	0	0	0
7:45	11	0	0	0	4	1	0	0
8:00	11	0	0	0	3	0	0	0
8:15	8	0	0	0	4	0	0	0
8:30	46	0	1	0	11	0	0	0
8:45	1	0	0	0	3	0	0	0

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	20	0	0	0	2	0	0	0
16:15	15	0	1	0	2	0	0	0
16:30	7	0	0	0	1	0	0	0
16:45	6	0	0	0	1	0	0	0
17:00	21	1	0	0	4	0	0	0
17:15	10	0	0	0	2	0	0	0
17:30	9	0	1	0	1	0	0	0
17:45	8	0	0	0	7	0	0	0

Prospect Avenue midblock btwn Matteson & Washington

Start Time	2/25/2025 Tue	Northboun	Southboun							Total
12:00 AM		0	0							0
12:15		1	1							2
12:30		1	0							1
12:45		0	0							0
01:00		0	0							0
01:15		1	2							3
01:30		1	1							2
01:45		0	0							0
02:00		0	0							0
02:15		0	1							1
02:30		1	0							1
02:45		1	0							1
03:00		0	0							0
03:15		0	0							0
03:30		1	0							1
03:45		3	0							3
04:00		0	1							1
04:15		2	0							2
04:30		0	2							2
04:45		2	2							4
05:00		1	1							2
05:15		2	1							3
05:30		2	6							8
05:45		5	4							9
06:00		7	5							12
06:15		3	6							9
06:30		1	6							7
06:45		2	7							9
07:00		11	5							16
07:15		11	7							18
07:30		23	8							31
07:45		**39**	**24**							**63**
08:00		**36**	**18**							**54**
08:15		**47**	**24**							**71**
08:30		**62**	**22**							**84**
08:45		12	17							29
09:00		10	4							14
09:15		3	9							12
09:30		5	6							11
09:45		8	9							17
10:00		9	7							16
10:15		5	5							10
10:30		16	8							24
10:45		8	4							12
11:00		14	10							24
11:15		7	9							16
11:30		8	8							16
11:45		12	6							18
Total		383	256							639
Percent		59.9%	40.1%							
Peak	-	07:45	07:45	-	-	-	-	-	-	07:45
Vol.	-	184	88	-	-	-	-	-	-	272
P.H.F.		0.742	0.917							0.810

Prospect Avenue midblock btwn Matteson & Washington

Start Time	2/25/2025 Tue	Northboun	Southboun							Total
12:00 PM		9	7							16
12:15		5	8							13
12:30		3	6							9
12:45		3	7							10
01:00		11	5							16
01:15		7	2							9
01:30		11	11							22
01:45		16	3							19
02:00		8	7							15
02:15		11	9							20
02:30		17	12							29
02:45		18	10							28
03:00		26	7							33
03:15		22	**48**							**70**
03:30		12	**23**							**35**
03:45		18	**8**							**26**
04:00		23	**18**							**41**
04:15		18	22							40
04:30		20	9							29
04:45		**19**	16							35
05:00		**21**	11							32
05:15		**18**	17							35
05:30		**30**	16							46
05:45		15	18							33
06:00		11	7							18
06:15		13	9							22
06:30		5	5							10
06:45		13	11							24
07:00		10	8							18
07:15		10	8							18
07:30		8	5							13
07:45		7	8							15
08:00		11	5							16
08:15		4	4							8
08:30		5	8							13
08:45		3	2							5
09:00		4	3							7
09:15		1	3							4
09:30		1	2							3
09:45		6	3							9
10:00		3	6							9
10:15		0	0							0
10:30		1	0							1
10:45		3	2							5
11:00		1	1							2
11:15		1	1							2
11:30		0	0							0
11:45		1	3							4
Total		483	404							887
Percent		54.5%	45.5%							
Peak	-	16:45	15:15	-	-	-	-	-	-	15:15
Vol.	-	88	97	-	-	-	-	-	-	172
P.H.F.		0.733	0.505							0.614
Grand Total		866	660							1526
Percent		56.7%	43.3%							
ADT		ADT 1,526		AADT 1,526						

Appendix C

VMT Analysis Worksheets

Culver CITY — VMT Tool

No analysis required. This project meets the screening criteria.

Project Name

10950 Washington Boulevard

Project Parcel — Click here for parcel viewer

4208024002

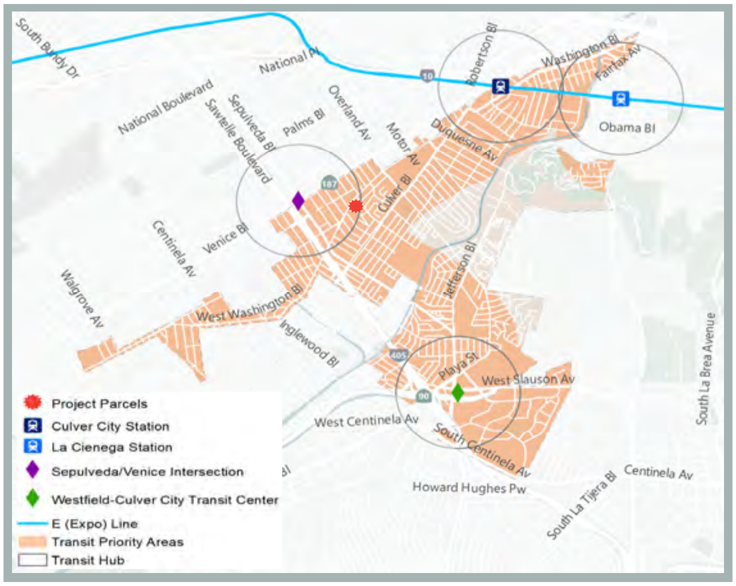
Project Screening

Apply to Full Project

Is this project within ½ mile of one of the following transit hubs? - Culver City Expo Station - La Cienega/Jefferson Expo Station - Westfield-Culver City Transit Center - Sepulveda/Venice intersection	Yes
Is the project located within any TPA and are at least 15% of the on-site residential units are affordable?	Yes
Does this project generate fewer than 250 daily trips?	N/A

Apply to Specific Land Uses

Is the retail component of project fewer than 50,000 square feet in size at every store?	No
Is this residential component of the project 100% affordable housing?	N/A



Project Daily Trips — N/A

Project Land Use

Residential	**Value (du)**
Single Family	
Multi-Family	428
Affordable Housing	
Family	79
Senior	
Special Needs	
Permanent Supportive	
Office	**Value (ksf)**
Standard	
Medical	**Value (ksf)**
Medical Office	
Hospital	
Industrial	**Value (ksf)**
Light Industrial	
Manufacturing	
Warehousing / Self-Storage	
Movie Studio	**Value (ksf)**
Office	
Post Production	
Stage	
Support	

The following land uses will require separate impact analysis (outside of this tool) if not screened out. Please leave the land uses in the table below if they are part of a mixed use project.

Retail	**Value (ksf)**
General	
Supermarket	
Bank	
Health Club	
Gas Station	
Auto Repair	
Home Improvement Superstore	
Free-Standing Discount	
Restaurant Non-fast-food	14.087
Restaurant Fast-food	
	Value (seats)
Theater w/ Matinee	
Hotel	**Value (rooms)**
Hotel	
Motel	
School	**Value (students)**
University	
High School	
Middle School	
Elementary	

Appendix D

HCM Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	26	34	51	13	47	47	822	38	48	991	17
Future Volume (veh/h)	24	26	34	51	13	47	47	822	38	48	991	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	28	37	55	14	51	51	893	41	52	1077	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	63	65	105	26	64	434	2875	1283	507	2875	1283
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	343	659	686	642	272	675	515	3554	1585	599	3554	1585
Grp Volume(v), veh/h	91	0	0	120	0	0	51	893	41	52	1077	18
Grp Sat Flow(s),veh/h/ln	1688	0	0	1589	0	0	515	1777	1585	599	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	0.0	3.6	7.7	0.6	2.9	10.0	0.3
Cycle Q Clear(g_c), s	6.0	0.0	0.0	8.7	0.0	0.0	13.6	7.7	0.6	10.6	10.0	0.3
Prop In Lane	0.29		0.41	0.46		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	0	0	195	0	0	434	2875	1283	507	2875	1283
V/C Ratio(X)	0.46	0.00	0.00	0.62	0.00	0.00	0.12	0.31	0.03	0.10	0.37	0.01
Avail Cap(c_a), veh/h	674	0	0	643	0	0	434	2875	1283	507	2875	1283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	0.0	52.9	0.0	0.0	5.0	2.9	2.2	4.3	3.1	2.2
Incr Delay (d2), s/veh	1.6	0.0	0.0	3.1	0.0	0.0	0.2	0.1	0.0	0.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	0.0	0.0	6.7	0.0	0.0	0.7	3.8	0.3	0.7	5.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	0.0	0.0	56.1	0.0	0.0	5.2	3.0	2.3	4.7	3.5	2.2
LnGrp LOS	D	A	A	E	A	A	A	A	A	A	A	A
Approach Vol, veh/h		91			120			985			1147	
Approach Delay, s/veh		53.5			56.1			3.1			3.5	
Approach LOS		D			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.2		17.8		102.2		17.8				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		12.6		8.0		15.6		10.7				
Green Ext Time (p_c), s		20.2		0.5		15.5		0.7				

Intersection Summary			
HCM 6th Ctrl Delay			8.0
HCM 6th LOS			A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
4: Culver Blvd & Elenda St

03/24/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	141	60	87	170	35	91	929	92	13	609	59
Future Volume (veh/h)	48	141	60	87	170	35	91	929	92	13	609	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	153	65	95	185	38	99	1010	100	14	662	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	522	222	148	811	687	129	861	516	61	746	333
Arrive On Green	0.07	0.42	0.42	0.08	0.43	0.43	0.07	0.24	0.24	0.03	0.21	0.21
Sat Flow, veh/h	1781	1246	529	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	52	0	218	95	185	38	99	1010	100	14	662	64
Grp Sat Flow(s),veh/h/ln	1781	0	1775	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.4	0.0	9.8	6.2	7.5	1.7	6.6	29.1	5.5	0.9	21.7	4.0
Cycle Q Clear(g_c), s	3.4	0.0	9.8	6.2	7.5	1.7	6.6	29.1	5.5	0.9	21.7	4.0
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	0	743	148	811	687	129	861	516	61	746	333
V/C Ratio(X)	0.43	0.00	0.29	0.64	0.23	0.06	0.77	1.17	0.19	0.23	0.89	0.19
Avail Cap(c_a), veh/h	212	0	743	212	811	687	214	861	516	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	0.0	23.1	53.3	21.4	19.7	54.7	45.5	29.1	56.4	46.0	39.0
Incr Delay (d2), s/veh	2.3	0.0	1.0	4.5	0.7	0.2	9.3	90.3	0.2	1.9	11.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	7.7	5.3	6.2	1.2	5.9	34.4	3.8	0.8	16.1	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	0.0	24.1	57.8	22.0	19.9	63.9	135.8	29.3	58.3	57.3	39.3
LnGrp LOS	E	A	C	E	C	B	E	F	C	E	E	D
Approach Vol, veh/h		270			318			1209			740	
Approach Delay, s/veh		30.2			32.5			121.1			55.8	
Approach LOS		C			C			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	57.7	9.4	39.0	15.7	55.9	13.3	35.1				
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9				
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27				
Max Q Clear Time (g_c+I1), s	5.4	9.5	2.9	31.1	8.2	11.8	8.6	23.7				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.1	1.3	0.1	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			81.3									
HCM 6th LOS			F									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	46	88	16	961	728	52
v/c Ratio	0.34	0.44	0.02	0.43	0.33	0.05
Control Delay	59.5	19.4	0.2	5.0	12.0	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	19.4	0.2	5.0	12.0	8.1
Queue Length 50th (ft)	35	0	0	44	128	10
Queue Length 95th (ft)	76	57	m1	60	207	32
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	623	811	2211	2211	995
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	58	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.16	0.02	0.43	0.33	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	81	15	884	670	48
Future Volume (vph)	42	81	15	884	670	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.36	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	672	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	88	16	961	728	52
RTOR Reduction (vph)	0	81	0	0	0	6
Lane Group Flow (vph)	46	7	16	961	728	46
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	9.1	9.1	91.3	75.0	75.0	75.0
Effective Green, g (s)	9.1	9.1	91.3	75.0	75.0	75.0
Actuated g/C Ratio	0.08	0.08	0.76	0.62	0.62	0.62
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	134	120	660	2211	2211	989
v/s Ratio Prot			c0.00	c0.27	0.21	
v/s Ratio Perm	c0.03	0.00	0.02			0.03
v/c Ratio	0.34	0.06	0.02	0.43	0.33	0.05
Uniform Delay, d1	52.6	51.5	4.2	11.6	10.6	8.7
Progression Factor	1.01	1.18	0.07	0.35	1.00	1.00
Incremental Delay, d2	1.5	0.2	0.0	0.6	0.4	0.1
Delay (s)	54.9	61.0	0.3	4.6	11.0	8.8
Level of Service	D	E	A	A	B	A
Approach Delay (s)	58.9			4.5	10.9	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	163	147	820	103	118	685
v/c Ratio	0.68	0.43	0.37	0.10	0.23	0.31
Control Delay	76.1	30.5	12.2	10.6	1.6	1.7
Queue Delay	0.0	11.5	0.0	0.0	0.0	0.0
Total Delay	76.1	42.0	12.2	10.6	1.6	1.7
Queue Length 50th (ft)	77	3	150	29	2	15
Queue Length 95th (ft)	205	125	238	67	9	29
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	446	2241	1002	881	2241
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	267	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.82	0.37	0.10	0.13	0.31

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	150	135	754	95	109	630
Future Volume (vph)	150	135	754	95	109	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.32	1.00
Satd. Flow (perm)	1770	1583	3539	1583	591	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	147	820	103	118	685
RTOR Reduction (vph)	0	127	0	0	0	0
Lane Group Flow (vph)	163	20	820	103	118	685
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	16.3	16.3	76.0	76.0	85.1	76.0
Effective Green, g (s)	16.3	16.3	76.0	76.0	85.1	76.0
Actuated g/C Ratio	0.14	0.14	0.63	0.63	0.71	0.63
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	240	215	2241	1002	508	2241
v/s Ratio Prot			c0.23		c0.02	0.19
v/s Ratio Perm	c0.09	0.01		0.07	0.15	
v/c Ratio	0.68	0.09	0.37	0.10	0.23	0.31
Uniform Delay, d1	49.4	45.4	10.5	8.6	5.6	10.0
Progression Factor	1.28	3.83	1.02	1.02	0.15	0.13
Incremental Delay, d2	7.2	0.2	0.5	0.2	0.2	0.3
Delay (s)	70.3	174.1	11.2	9.0	1.1	1.6
Level of Service	E	F	B	A	A	A
Approach Delay (s)	119.6		10.9			1.5
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	63	45	18	511
v/c Ratio	0.17	0.02	0.17	0.21
Control Delay	26.3	0.0	61.0	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.3	0.0	61.0	6.2
Queue Length 50th (ft)	25	0	14	58
Queue Length 95th (ft)	61	0	m36	71
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	658	2292	339	2405
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.02	0.05	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	21	0	41	17	470
Future Volume (vph)	37	21	0	41	17	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.95		0.85		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1716		3008		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1716		3008		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	23	0	45	18	511
RTOR Reduction (vph)	18	0	18	0	0	0
Lane Group Flow (vph)	45	0	27	0	18	511
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	25.1		73.1		3.2	81.6
Effective Green, g (s)	25.1		73.1		3.2	81.6
Actuated g/C Ratio	0.21		0.61		0.03	0.68
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	358		1832		47	2406
v/s Ratio Prot	c0.03		0.01		0.01	c0.14
v/s Ratio Perm						
v/c Ratio	0.13		0.01		0.38	0.21
Uniform Delay, d1	38.5		9.2		57.4	7.2
Progression Factor	1.00		1.00		1.08	0.79
Incremental Delay, d2	0.2		0.0		5.0	0.2
Delay (s)	38.7		9.3		67.2	5.9
Level of Service	D		A		E	A
Approach Delay (s)	38.7		9.3			8.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	38	410	21	530	552	407	77
v/c Ratio	0.13	0.72	0.06	0.24	0.23	0.21	0.05
Control Delay	42.1	54.8	0.3	11.1	5.0	4.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.3	0.0
Total Delay	42.1	54.8	0.3	11.1	5.3	4.3	0.1
Queue Length 50th (ft)	25	157	0	73	45	27	0
Queue Length 95th (ft)	55	201	0	153	65	43	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2248	2405	1912	1444
Starvation Cap Reductn	0	0	0	0	1192	873	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.36	0.04	0.24	0.46	0.39	0.05

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	35	377	19	0	488	508	361	14	0	0	71
Future Volume (vph)	35	377	19	0	488	508	361	14	0	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	410	21	0	530	552	392	15	0	0	77
RTOR Reduction (vph)	0	0	18	0	0	0	18	0	0	0	25
Lane Group Flow (vph)	38	410	3	0	530	552	389	0	0	0	52
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	19.8	19.8	19.8		73.1	81.6	81.6				81.6
Effective Green, g (s)	19.8	19.8	19.8		73.1	81.6	81.6				81.6
Actuated g/C Ratio	0.17	0.17	0.17		0.61	0.68	0.68				0.68
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	292	566	261		2155	2406	1895				1095
v/s Ratio Prot		c0.12			c0.15	c0.16					
v/s Ratio Perm	0.02		0.00				0.14				0.03
v/c Ratio	0.13	0.72	0.01		0.25	0.23	0.21				0.05
Uniform Delay, d1	42.8	47.5	41.9		10.8	7.3	7.1				6.4
Progression Factor	1.00	1.00	1.00		1.00	0.62	0.57				1.00
Incremental Delay, d2	0.2	4.6	0.0		0.3	0.2	0.2				0.1
Delay (s)	43.0	52.1	41.9		11.1	4.7	4.3				6.4
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		50.9			11.1	4.6			6.4		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	991	0	0	991
Future Vol, veh/h	0	0	991	0	0	991
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1077	0	0	1077

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1616	539	0	0	1077	0
Stage 1	1077	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	94	487	-	-	643	-
Stage 1	288	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	94	487	-	-	643	-
Mov Cap-2 Maneuver	210	-	-	-	-	-
Stage 1	288	-	-	-	-	-
Stage 2	549	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	643	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	71	0	0	0	0	975	0	0	899	0
Future Vol, veh/h	16	0	71	0	0	0	0	975	0	0	899	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	77	0	0	0	0	1060	0	0	977	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1507	2037	489	1549	2037	530	977	0	0	1060	0	0
Stage 1	977	977	-	1060	1060	-	-	-	-	-	-	-
Stage 2	530	1060	-	489	977	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	83	56	525	77	56	493	702	-	-	653	-	-
Stage 1	269	327	-	239	299	-	-	-	-	-	-	-
Stage 2	500	299	-	529	327	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	83	56	525	66	56	493	702	-	-	653	-	-
Mov Cap-2 Maneuver	83	56	-	66	56	-	-	-	-	-	-	-
Stage 1	269	327	-	239	299	-	-	-	-	-	-	-
Stage 2	500	299	-	451	327	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.9	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	702	-	-	265	-	653	-	-
HCM Lane V/C Ratio	-	-	-	0.357	-	-	-	-
HCM Control Delay (s)	0	-	-	25.9	0	0	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	84	32	27	18	19	62	1139	31	94	1129	29
Future Volume (veh/h)	31	84	32	27	18	19	62	1139	31	94	1129	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	91	35	29	20	21	67	1238	34	102	1227	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	123	43	95	65	50	359	2806	1252	355	2806	1252
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.79	0.79	0.79	0.79	0.79	0.79
Sat Flow, veh/h	271	1076	377	459	566	439	441	3554	1585	435	3554	1585
Grp Volume(v), veh/h	160	0	0	70	0	0	67	1238	34	102	1227	32
Grp Sat Flow(s),veh/h/ln	1724	0	0	1463	0	0	441	1777	1585	435	1777	1585
Q Serve(g_s), s	5.9	0.0	0.0	0.0	0.0	0.0	6.9	13.5	0.6	11.9	13.3	0.5
Cycle Q Clear(g_c), s	10.8	0.0	0.0	4.9	0.0	0.0	20.2	13.5	0.6	25.3	13.3	0.5
Prop In Lane	0.21		0.22	0.41		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	0	0	210	0	0	359	2806	1252	355	2806	1252
V/C Ratio(X)	0.68	0.00	0.00	0.33	0.00	0.00	0.19	0.44	0.03	0.29	0.44	0.03
Avail Cap(c_a), veh/h	706	0	0	631	0	0	359	2806	1252	355	2806	1252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	0.0	49.1	0.0	0.0	7.3	4.1	2.7	8.2	4.1	2.7
Incr Delay (d2), s/veh	3.5	0.0	0.0	0.9	0.0	0.0	0.4	0.2	0.0	2.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.6	0.0	0.0	3.6	0.0	0.0	1.2	7.2	0.3	2.2	7.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	0.0	50.0	0.0	0.0	7.7	4.3	2.7	10.2	4.6	2.7
LnGrp LOS	E	A	A	D	A	A	A	A	A	B	A	A
Approach Vol, veh/h		160			70			1339			1361	
Approach Delay, s/veh		55.2			50.0			4.4			4.9	
Approach LOS		E			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.9		20.1		99.9		20.1				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		27.3		12.8		22.2		6.9				
Green Ext Time (p_c), s		21.3		1.0		22.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	149	129	15	39	9	67	848	31	9	875	59
Future Volume (veh/h)	73	149	129	15	39	9	67	848	31	9	875	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	162	140	16	42	10	73	922	34	10	951	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	377	326	147	772	654	122	933	547	46	803	358
Arrive On Green	0.08	0.41	0.41	0.08	0.41	0.41	0.07	0.26	0.26	0.03	0.23	0.23
Sat Flow, veh/h	1781	926	800	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	79	0	302	16	42	10	73	922	34	10	951	64
Grp Sat Flow(s),veh/h/ln	1781	0	1726	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.1	0.0	15.1	1.0	1.6	0.4	4.8	31.0	1.7	0.7	27.1	3.9
Cycle Q Clear(g_c), s	5.1	0.0	15.1	1.0	1.6	0.4	4.8	31.0	1.7	0.7	27.1	3.9
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	0	703	147	772	654	122	933	547	46	803	358
V/C Ratio(X)	0.57	0.00	0.43	0.11	0.05	0.02	0.60	0.99	0.06	0.22	1.18	0.18
Avail Cap(c_a), veh/h	212	0	703	212	772	654	214	933	547	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	25.6	50.9	21.2	20.8	54.3	44.1	26.3	57.2	46.5	37.5
Incr Delay (d2), s/veh	3.5	0.0	1.8	0.3	0.1	0.0	4.6	26.6	0.0	2.3	95.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	0.0	10.6	0.8	1.3	0.3	4.1	23.7	1.2	0.6	33.2	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	0.0	27.4	51.3	21.3	20.9	58.9	70.7	26.3	59.5	142.2	37.7
LnGrp LOS	E	A	C	D	C	C	E	E	C	E	F	D
Approach Vol, veh/h		381			68			1029			1025	
Approach Delay, s/veh		33.5			28.3			68.4			134.9	
Approach LOS		C			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	55.2	8.4	41.4	15.6	54.6	12.8	37.0
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27
Max Q Clear Time (g_c+I1), s	7.1	3.6	2.7	33.0	3.0	17.1	6.8	29.1
Green Ext Time (p_c), s	0.1	0.2	0.0	0.0	0.0	1.8	0.1	0.0

Intersection Summary			
HCM 6th Ctrl Delay			89.2
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	29	49	13	953	1136	46
v/c Ratio	0.11	0.18	0.03	0.45	0.54	0.05
Control Delay	45.9	19.5	0.6	2.8	16.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	45.9	19.5	0.6	2.8	17.0	11.1
Queue Length 50th (ft)	21	6	0	18	257	11
Queue Length 95th (ft)	50	40	m0	40	405	35
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	598	602	2113	2113	949
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	8	0	0	103	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.08	0.02	0.45	0.57	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	45	12	877	1045	42
Future Volume (vph)	27	45	12	877	1045	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	370	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	49	13	953	1136	46
RTOR Reduction (vph)	0	42	0	0	0	4
Lane Group Flow (vph)	29	7	13	953	1136	42
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	18.0	18.0	82.4	71.7	71.7	71.7
Effective Green, g (s)	18.0	18.0	82.4	71.7	71.7	71.7
Actuated g/C Ratio	0.15	0.15	0.69	0.60	0.60	0.60
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	265	237	378	2114	2114	945
v/s Ratio Prot			c0.00	0.27	c0.32	
v/s Ratio Perm	c0.02	0.00	0.02			0.03
v/c Ratio	0.11	0.03	0.03	0.45	0.54	0.04
Uniform Delay, d1	44.1	43.6	11.7	13.3	14.3	10.0
Progression Factor	1.10	1.66	0.08	0.15	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0	0.7	1.0	0.1
Delay (s)	48.5	72.2	1.0	2.6	15.3	10.1
Level of Service	D	E	A	A	B	B
Approach Delay (s)	63.4			2.6	15.1	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	77	117	878	95	250	923
v/c Ratio	0.49	0.47	0.41	0.10	0.41	0.43
Control Delay	78.7	32.0	16.2	8.8	9.6	1.5
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	78.7	32.4	16.2	8.8	9.6	1.5
Queue Length 50th (ft)	62	0	305	55	29	11
Queue Length 95th (ft)	112	84	404	62	95	17
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	422	2143	958	884	2143
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	95	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.36	0.41	0.10	0.28	0.43

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	71	108	808	87	230	849
Future Volume (vph)	71	108	808	87	230	849
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.29	1.00
Satd. Flow (perm)	1770	1583	3539	1583	536	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	117	878	95	250	923
RTOR Reduction (vph)	0	107	0	0	0	0
Lane Group Flow (vph)	77	10	878	95	250	923
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	10.7	10.7	72.7	72.7	90.7	72.7
Effective Green, g (s)	10.7	10.7	72.7	72.7	90.7	72.7
Actuated g/C Ratio	0.09	0.09	0.61	0.61	0.76	0.61
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	157	141	2144	959	590	2144
v/s Ratio Prot			0.25		c0.06	c0.26
v/s Ratio Perm	c0.04	0.01		0.06	0.26	
v/c Ratio	0.49	0.07	0.41	0.10	0.42	0.43
Uniform Delay, d1	52.1	50.1	12.4	9.9	4.6	12.6
Progression Factor	1.33	2.87	1.13	0.71	2.98	0.07
Incremental Delay, d2	2.4	0.2	0.5	0.2	0.4	0.5
Delay (s)	71.5	143.9	14.6	7.2	14.2	1.4
Level of Service	E	F	B	A	B	A
Approach Delay (s)	115.2		13.9			4.1
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	1081	16	830
v/c Ratio	0.11	0.49	0.15	0.35
Control Delay	22.4	18.3	44.9	17.2
Queue Delay	0.0	0.8	0.0	0.0
Total Delay	22.4	19.1	44.9	17.2
Queue Length 50th (ft)	14	331	12	247
Queue Length 95th (ft)	42	458	m27	337
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	649	2205	339	2370
Starvation Cap Reductn	0	727	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.73	0.05	0.35

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	18	964	30	15	764
Future Volume (vph)	20	18	964	30	15	764
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1699		3523		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1699		3523		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	20	1048	33	16	830
RTOR Reduction (vph)	16	0	1	0	0	0
Lane Group Flow (vph)	26	0	1080	0	16	830
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	26.3		72.0		3.1	80.4
Effective Green, g (s)	26.3		72.0		3.1	80.4
Actuated g/C Ratio	0.22		0.60		0.03	0.67
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	372		2113		45	2371
v/s Ratio Prot	c0.02		c0.31		0.01	c0.23
v/s Ratio Perm						
v/c Ratio	0.07		0.51		0.36	0.35
Uniform Delay, d1	37.2		13.8		57.5	8.5
Progression Factor	1.00		1.26		0.79	1.85
Incremental Delay, d2	0.1		0.9		4.6	0.4
Delay (s)	37.2		18.3		49.9	16.2
Level of Service	D		B		D	B
Approach Delay (s)	37.2		18.3			16.8
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	25	441	26	577	887	438	84
v/c Ratio	0.08	0.73	0.07	0.26	0.37	0.23	0.06
Control Delay	39.9	54.1	0.4	11.9	4.6	3.3	0.1
Queue Delay	0.0	0.3	0.0	0.0	0.2	0.2	0.0
Total Delay	39.9	54.4	0.4	12.0	4.9	3.5	0.1
Queue Length 50th (ft)	16	168	0	84	52	18	0
Queue Length 95th (ft)	40	211	0	174	72	30	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2215	2370	1885	1439
Starvation Cap Reductn	0	0	0	0	729	771	0
Spillback Cap Reductn	0	253	0	302	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.50	0.04	0.30	0.54	0.39	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	23	406	24	0	531	816	391	12	0	0	77
Future Volume (vph)	23	406	24	0	531	816	391	12	0	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	441	26	0	577	887	425	13	0	0	84
RTOR Reduction (vph)	0	0	21	0	0	0	19	0	0	0	28
Lane Group Flow (vph)	25	441	5	0	577	887	419	0	0	0	56
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	21.0	21.0	21.0		72.0	80.4	80.4				80.4
Effective Green, g (s)	21.0	21.0	21.0		72.0	80.4	80.4				80.4
Actuated g/C Ratio	0.18	0.18	0.18		0.60	0.67	0.67				0.67
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	309	600	277		2123	2371	1867				1079
v/s Ratio Prot		c0.13			0.16	c0.25					
v/s Ratio Perm	0.01		0.00				0.15				0.03
v/c Ratio	0.08	0.73	0.02		0.27	0.37	0.22				0.05
Uniform Delay, d1	41.4	46.9	41.0		11.5	8.7	7.7				6.8
Progression Factor	1.00	1.00	1.00		1.00	0.45	0.42				1.00
Incremental Delay, d2	0.1	4.7	0.0		0.3	0.4	0.3				0.1
Delay (s)	41.5	51.5	41.0		11.8	4.4	3.5				6.9
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		50.5			11.8	4.1			6.9		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1075	0	0	1237
Future Vol, veh/h	0	0	1075	0	0	1237
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1168	0	0	1345

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1841	584	0	0	1168	0
Stage 1	1168	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	67	455	-	-	594	-
Stage 1	258	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	67	455	-	-	594	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	258	-	-	-	-	-
Stage 2	468	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	594	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	54	0	0	0	0	1070	0	0	1207	0
Future Vol, veh/h	5	0	54	0	0	0	0	1070	0	0	1207	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	59	0	0	0	0	1163	0	0	1312	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1894	2475	656	1819	2475	582	1312	0	0	1163	0	0
Stage 1	1312	1312	-	1163	1163	-	-	-	-	-	-	-
Stage 2	582	1163	-	656	1312	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	43	29	408	48	29	456	523	-	-	596	-	-
Stage 1	167	227	-	207	267	-	-	-	-	-	-	-
Stage 2	466	267	-	421	227	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	29	408	41	29	456	523	-	-	596	-	-
Mov Cap-2 Maneuver	43	29	-	41	29	-	-	-	-	-	-	-
Stage 1	167	227	-	207	267	-	-	-	-	-	-	-
Stage 2	466	267	-	360	227	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.7	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	523	-	-	237	-	596	-	-
HCM Lane V/C Ratio	-	-	-	0.271	-	-	-	-
HCM Control Delay (s)	0	-	-	25.7	0	0	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	26	34	51	13	69	47	822	38	33	991	17
Future Volume (veh/h)	24	26	34	51	13	69	47	822	38	33	991	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	28	37	55	14	75	51	893	41	36	1077	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	72	74	100	27	92	423	2824	1260	495	2824	1260
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.79	0.79	0.79	0.79	0.79	0.79
Sat Flow, veh/h	322	661	673	531	243	841	515	3554	1585	599	3554	1585
Grp Volume(v), veh/h	91	0	0	144	0	0	51	893	41	36	1077	18
Grp Sat Flow(s),veh/h/ln	1656	0	0	1615	0	0	515	1777	1585	599	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	4.2	0.0	0.0	3.9	8.3	0.7	2.1	10.7	0.3
Cycle Q Clear(g_c), s	6.0	0.0	0.0	10.2	0.0	0.0	14.6	8.3	0.7	10.4	10.7	0.3
Prop In Lane	0.29		0.41	0.38		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	220	0	0	218	0	0	423	2824	1260	495	2824	1260
V/C Ratio(X)	0.41	0.00	0.00	0.66	0.00	0.00	0.12	0.32	0.03	0.07	0.38	0.01
Avail Cap(c_a), veh/h	669	0	0	649	0	0	423	2824	1260	495	2824	1260
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	0.0	0.0	52.0	0.0	0.0	5.8	3.4	2.6	4.8	3.6	2.6
Incr Delay (d2), s/veh	1.2	0.0	0.0	3.4	0.0	0.0	0.2	0.1	0.0	0.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	0.0	0.0	7.9	0.0	0.0	0.8	4.3	0.3	0.5	5.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	0.0	0.0	55.3	0.0	0.0	6.0	3.5	2.6	5.1	4.0	2.6
LnGrp LOS	D	A	A	E	A	A	A	A	A	A	A	A
Approach Vol, veh/h		91			144			985			1131	
Approach Delay, s/veh		51.5			55.3			3.6			4.0	
Approach LOS		D			E			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		100.5		19.5		100.5		19.5				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		12.7		8.0		16.6		12.2				
Green Ext Time (p_c), s		19.7		0.5		15.3		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	141	60	87	170	35	91	929	92	13	609	44
Future Volume (veh/h)	70	141	60	87	170	35	91	929	92	13	609	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	153	65	95	185	38	99	1010	100	14	662	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	522	222	148	796	674	129	860	516	61	746	333
Arrive On Green	0.08	0.42	0.42	0.08	0.43	0.43	0.07	0.24	0.24	0.03	0.21	0.21
Sat Flow, veh/h	1781	1246	529	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	76	0	218	95	185	38	99	1010	100	14	662	48
Grp Sat Flow(s),veh/h/ln	1781	0	1775	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.9	0.0	9.8	6.2	7.6	1.7	6.6	29.0	5.5	0.9	21.7	3.0
Cycle Q Clear(g_c), s	4.9	0.0	9.8	6.2	7.6	1.7	6.6	29.0	5.5	0.9	21.7	3.0
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	137	0	743	148	796	674	129	860	516	61	746	333
V/C Ratio(X)	0.56	0.00	0.29	0.64	0.23	0.06	0.77	1.17	0.19	0.23	0.89	0.14
Avail Cap(c_a), veh/h	212	0	743	212	796	674	214	860	516	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	23.1	53.3	22.0	20.3	54.7	45.5	29.1	56.4	46.0	38.6
Incr Delay (d2), s/veh	3.5	0.0	1.0	4.5	0.7	0.2	9.3	90.6	0.2	1.9	11.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	0.0	7.7	5.3	6.3	1.2	5.9	34.4	3.8	0.8	16.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	0.0	24.1	57.8	22.7	20.5	63.9	136.1	29.3	58.3	57.4	38.8
LnGrp LOS	E	A	C	E	C	C	E	F	C	E	E	D
Approach Vol, veh/h		294			318			1209			724	
Approach Delay, s/veh		32.6			32.9			121.4			56.2	
Approach LOS		C			C			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.9	56.7	9.4	38.9	15.7	56.0	13.3	35.1				
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9				
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27				
Max Q Clear Time (g_c+I1), s	6.9	9.6	2.9	31.0	8.2	11.8	8.6	23.7				
Green Ext Time (p_c), s	0.1	1.2	0.0	0.0	0.1	1.3	0.1	1.5				

Intersection Summary		
HCM 6th Ctrl Delay		81.5
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	46	72	40	1017	689	52
v/c Ratio	0.33	0.38	0.06	0.46	0.31	0.05
Control Delay	56.7	18.3	0.3	4.5	11.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	18.3	0.3	4.5	11.6	7.9
Queue Length 50th (ft)	34	0	1	41	117	9
Queue Length 95th (ft)	77	43	1	75	193	31
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	613	838	2228	2228	1003
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	7	0	0	3	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.12	0.05	0.46	0.31	0.05

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	66	37	936	634	48
Future Volume (vph)	42	66	37	936	634	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.38	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	707	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	72	40	1017	689	52
RTOR Reduction (vph)	0	66	0	0	0	7
Lane Group Flow (vph)	46	6	40	1017	689	45
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	9.6	9.6	90.8	75.5	75.5	75.5
Effective Green, g (s)	9.6	9.6	90.8	75.5	75.5	75.5
Actuated g/C Ratio	0.08	0.08	0.76	0.63	0.63	0.63
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	141	126	670	2226	2226	995
v/s Ratio Prot			c0.01	c0.29	0.19	
v/s Ratio Perm	c0.03	0.00	0.04			0.03
v/c Ratio	0.33	0.05	0.06	0.46	0.31	0.05
Uniform Delay, d1	52.1	51.0	4.3	11.6	10.2	8.5
Progression Factor	0.99	1.11	0.07	0.31	1.00	1.00
Incremental Delay, d2	1.4	0.2	0.0	0.6	0.4	0.1
Delay (s)	53.0	56.9	0.3	4.2	10.6	8.6
Level of Service	D	E	A	A	B	A
Approach Delay (s)	55.4			4.1	10.5	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	147	147	900	127	118	629
v/c Ratio	0.65	0.45	0.40	0.13	0.24	0.28
Control Delay	75.8	31.8	7.1	6.9	2.2	1.6
Queue Delay	0.0	12.2	0.0	0.0	0.0	0.0
Total Delay	75.8	44.0	7.1	6.9	2.2	1.6
Queue Length 50th (ft)	69	3	79	20	1	12
Queue Length 95th (ft)	190	132	123	45	17	24
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	446	2257	1009	863	2257
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	269	2	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.83	0.40	0.13	0.14	0.28

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	135	135	828	117	109	579
Future Volume (vph)	135	135	828	117	109	579
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.29	1.00
Satd. Flow (perm)	1770	1583	3539	1583	534	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	147	900	127	118	629
RTOR Reduction (vph)	0	128	0	0	0	0
Lane Group Flow (vph)	147	19	900	127	118	629
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	15.3	15.3	76.5	76.5	86.1	76.5
Effective Green, g (s)	15.3	15.3	76.5	76.5	86.1	76.5
Actuated g/C Ratio	0.13	0.13	0.64	0.64	0.72	0.64
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	225	201	2256	1009	482	2256
v/s Ratio Prot			c0.25		c0.02	0.18
v/s Ratio Perm	c0.08	0.01		0.08	0.16	
v/c Ratio	0.65	0.09	0.40	0.13	0.24	0.28
Uniform Delay, d1	49.8	46.2	10.6	8.6	5.4	9.6
Progression Factor	1.27	3.86	0.57	0.66	0.30	0.12
Incremental Delay, d2	6.4	0.2	0.5	0.2	0.3	0.3
Delay (s)	69.7	178.5	6.5	5.9	1.9	1.5
Level of Service	E	F	A	A	A	A
Approach Delay (s)	124.1		6.5			1.5
Approach LOS	F		A			A

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	63	1021	18	567
v/c Ratio	0.17	0.45	0.17	0.23
Control Delay	26.7	17.0	58.1	6.5
Queue Delay	0.0	0.8	0.0	0.0
Total Delay	26.7	17.8	58.1	6.5
Queue Length 50th (ft)	26	297	12	69
Queue Length 95th (ft)	62	418	m37	102
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	658	2249	339	2420
Starvation Cap Reductn	0	843	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.73	0.05	0.23

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	21	898	41	17	522
Future Volume (vph)	37	21	898	41	17	522
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.95		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1716		3516		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1716		3516		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	23	976	45	18	567
RTOR Reduction (vph)	18	0	2	0	0	0
Lane Group Flow (vph)	45	0	1019	0	18	567
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	24.6		73.6		3.2	82.1
Effective Green, g (s)	24.6		73.6		3.2	82.1
Actuated g/C Ratio	0.21		0.61		0.03	0.68
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	351		2156		47	2421
v/s Ratio Prot	c0.03		c0.29		0.01	c0.16
v/s Ratio Perm						
v/c Ratio	0.13		0.47		0.38	0.23
Uniform Delay, d1	38.9		12.6		57.4	7.1
Progression Factor	1.00		1.30		1.03	0.83
Incremental Delay, d2	0.2		0.7		5.1	0.2
Delay (s)	39.1		17.2		64.1	6.2
Level of Service	D		B		E	A
Approach Delay (s)	39.1		17.2			7.9
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	38	393	21	508	609	440	77
v/c Ratio	0.13	0.71	0.06	0.22	0.25	0.23	0.05
Control Delay	42.7	54.9	0.4	10.8	4.9	4.0	0.1
Queue Delay	0.0	0.1	0.0	0.0	0.3	0.3	0.0
Total Delay	42.7	55.0	0.4	10.8	5.2	4.3	0.1
Queue Length 50th (ft)	26	150	0	68	49	29	0
Queue Length 95th (ft)	56	195	0	144	68	46	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2263	2420	1924	1446
Starvation Cap Reductn	0	0	0	0	1144	851	0
Spillback Cap Reductn	0	133	0	284	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.39	0.04	0.26	0.48	0.41	0.05

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	35	362	19	0	467	560	391	14	0	0	71
Future Volume (vph)	35	362	19	0	467	560	391	14	0	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	393	21	0	508	609	425	15	0	0	77
RTOR Reduction (vph)	0	0	18	0	0	0	18	0	0	0	24
Lane Group Flow (vph)	38	393	3	0	508	609	422	0	0	0	53
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	19.3	19.3	19.3		73.6	82.1	82.1				82.1
Effective Green, g (s)	19.3	19.3	19.3		73.6	82.1	82.1				82.1
Actuated g/C Ratio	0.16	0.16	0.16		0.61	0.68	0.68				0.68
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	284	552	254		2170	2421	1906				1102
v/s Ratio Prot		c0.11			0.14	c0.17					
v/s Ratio Perm	0.02		0.00				0.15				0.03
v/c Ratio	0.13	0.71	0.01		0.23	0.25	0.22				0.05
Uniform Delay, d1	43.2	47.7	42.3		10.5	7.2	7.1				6.2
Progression Factor	1.00	1.00	1.00		1.00	0.61	0.57				1.00
Incremental Delay, d2	0.2	4.3	0.0		0.3	0.2	0.3				0.1
Delay (s)	43.4	52.0	42.4		10.7	4.7	4.3				6.3
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		50.9			10.7	4.5			6.3		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	68	1036	24	45	1005
Future Vol, veh/h	37	68	1036	24	45	1005
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	74	1126	26	49	1092

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1783	576	0	0	1152	0
Stage 1	1139	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	73	460	-	-	602	-
Stage 1	267	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	58	460	-	-	602	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	267	-	-	-	-	-
Stage 2	385	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.7	0	1.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	286	602	-
HCM Lane V/C Ratio	-	-	0.399	0.081	-
HCM Control Delay (s)	-	-	25.7	11.5	1.1
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	1.8	0.3	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	71	24	0	45	0	999	8	18	936	0
Future Vol, veh/h	16	0	71	24	0	45	0	999	8	18	936	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	77	26	0	49	0	1086	9	20	1017	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1600	2152	509	1640	2148	548	1017	0	0	1095	0	0
Stage 1	1057	1057	-	1091	1091	-	-	-	-	-	-	-
Stage 2	543	1095	-	549	1057	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	71	47	509	66	48	480	678	-	-	633	-	-
Stage 1	240	300	-	229	289	-	-	-	-	-	-	-
Stage 2	492	288	-	488	300	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	60	44	509	53	44	480	678	-	-	633	-	-
Mov Cap-2 Maneuver	60	44	-	53	44	-	-	-	-	-	-	-
Stage 1	240	278	-	229	289	-	-	-	-	-	-	-
Stage 2	442	288	-	384	278	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.5	68.8	0	0.6
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	678	-	-	214	126	633	-	-
HCM Lane V/C Ratio	-	-	-	0.442	0.595	0.031	-	-
HCM Control Delay (s)	0	-	-	34.5	68.8	10.9	0.4	-
HCM Lane LOS	A	-	-	D	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	2.1	3	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	84	32	27	18	8	62	1139	31	113	1129	29
Future Volume (veh/h)	31	84	32	27	18	8	62	1139	31	113	1129	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	91	35	29	20	9	67	1238	34	123	1227	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	123	43	108	69	24	359	2805	1251	355	2805	1251
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.79	0.79	0.79	0.79	0.79	0.79
Sat Flow, veh/h	270	1073	376	547	598	210	441	3554	1585	435	3554	1585
Grp Volume(v), veh/h	160	0	0	58	0	0	67	1238	34	123	1227	32
Grp Sat Flow(s),veh/h/ln	1719	0	0	1355	0	0	441	1777	1585	435	1777	1585
Q Serve(g_s), s	6.5	0.0	0.0	0.0	0.0	0.0	6.9	13.5	0.6	15.3	13.3	0.5
Cycle Q Clear(g_c), s	10.8	0.0	0.0	4.3	0.0	0.0	20.3	13.5	0.6	28.8	13.3	0.5
Prop In Lane	0.21		0.22	0.50		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	0	0	201	0	0	359	2805	1251	355	2805	1251
V/C Ratio(X)	0.68	0.00	0.00	0.29	0.00	0.00	0.19	0.44	0.03	0.35	0.44	0.03
Avail Cap(c_a), veh/h	707	0	0	617	0	0	359	2805	1251	355	2805	1251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	0.0	48.7	0.0	0.0	7.3	4.1	2.7	8.7	4.1	2.7
Incr Delay (d2), s/veh	3.5	0.0	0.0	0.8	0.0	0.0	0.4	0.2	0.0	2.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.6	0.0	0.0	3.0	0.0	0.0	1.2	7.2	0.3	2.9	7.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	0.0	49.5	0.0	0.0	7.8	4.3	2.7	11.4	4.6	2.8
LnGrp LOS	E	A	A	D	A	A	A	A	A	B	A	A
Approach Vol, veh/h		160			58			1339			1382	
Approach Delay, s/veh		55.2			49.5			4.4			5.1	
Approach LOS		E			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.8		20.2		99.8		20.2				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		30.8		12.8		22.3		6.3				
Green Ext Time (p_c), s		20.2		1.0		22.1		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			8.4
HCM 6th LOS			A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	149	129	15	39	9	67	848	31	9	875	78
Future Volume (veh/h)	62	149	129	15	39	9	67	848	31	9	875	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	162	140	16	42	10	73	922	34	10	951	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	377	326	147	777	659	122	933	547	46	803	358
Arrive On Green	0.07	0.41	0.41	0.08	0.42	0.42	0.07	0.26	0.26	0.03	0.23	0.23
Sat Flow, veh/h	1781	926	800	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	67	0	302	16	42	10	73	922	34	10	951	85
Grp Sat Flow(s),veh/h/ln	1781	0	1726	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.3	0.0	15.1	1.0	1.6	0.4	4.8	31.0	1.7	0.7	27.1	5.3
Cycle Q Clear(g_c), s	4.3	0.0	15.1	1.0	1.6	0.4	4.8	31.0	1.7	0.7	27.1	5.3
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	0	703	147	777	659	122	933	547	46	803	358
V/C Ratio(X)	0.51	0.00	0.43	0.11	0.05	0.02	0.60	0.99	0.06	0.22	1.18	0.24
Avail Cap(c_a), veh/h	212	0	703	212	777	659	214	933	547	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	25.5	51.0	21.0	20.6	54.3	44.1	26.3	57.2	46.5	38.0
Incr Delay (d2), s/veh	2.8	0.0	1.8	0.3	0.1	0.0	4.6	26.6	0.0	2.3	95.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.7	0.0	10.6	0.8	1.3	0.3	4.1	23.7	1.2	0.6	33.2	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	0.0	27.3	51.3	21.1	20.7	58.9	70.7	26.4	59.5	142.2	38.3
LnGrp LOS	E	A	C	D	C	C	E	E	C	E	F	D
Approach Vol, veh/h		369			68			1029			1046	
Approach Delay, s/veh		32.6			28.1			68.4			133.0	
Approach LOS		C			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	55.6	8.4	41.4	15.6	54.6	12.8	37.0
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27
Max Q Clear Time (g_c+I1), s	6.3	3.6	2.7	33.0	3.0	17.1	6.8	29.1
Green Ext Time (p_c), s	0.1	0.2	0.0	0.0	0.0	1.8	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	88.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	29	70	1	926	1185	46
v/c Ratio	0.11	0.24	0.00	0.44	0.57	0.05
Control Delay	45.6	17.5	1.0	3.1	18.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	17.5	1.0	3.1	18.0	11.5
Queue Length 50th (ft)	22	9	0	20	280	11
Queue Length 95th (ft)	m49	48	m0	41	442	36
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	612	580	2092	2092	939
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	3	0	0	80	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.11	0.00	0.44	0.59	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	64	1	852	1090	42
Future Volume (vph)	27	64	1	852	1090	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.18	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	340	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	70	1	926	1185	46
RTOR Reduction (vph)	0	60	0	0	0	4
Lane Group Flow (vph)	29	10	1	926	1185	42
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	17.4	17.4	83.0	71.0	71.0	71.0
Effective Green, g (s)	17.4	17.4	83.0	71.0	71.0	71.0
Actuated g/C Ratio	0.14	0.14	0.69	0.59	0.59	0.59
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	229	378	2093	2093	936
v/s Ratio Prot			c0.00	0.26	c0.33	
v/s Ratio Perm	c0.02	0.01	0.00			0.03
v/c Ratio	0.11	0.04	0.00	0.44	0.57	0.05
Uniform Delay, d1	44.6	44.1	12.0	13.6	15.0	10.3
Progression Factor	1.08	1.65	0.10	0.16	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0	0.6	1.1	0.1
Delay (s)	48.2	73.1	1.2	2.8	16.2	10.4
Level of Service	D	E	A	A	B	B
Approach Delay (s)	65.8			2.8	15.9	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	117	840	83	250	991
v/c Ratio	0.55	0.44	0.40	0.09	0.41	0.47
Control Delay	76.4	27.6	15.3	8.7	8.1	1.8
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	76.4	28.0	15.3	8.7	8.1	1.8
Queue Length 50th (ft)	79	0	285	43	22	15
Queue Length 95th (ft)	131	67	383	54	81	24
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	422	2122	949	890	2122
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	96	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.36	0.40	0.09	0.28	0.47

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	90	108	773	76	230	912
Future Volume (vph)	90	108	773	76	230	912
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.30	1.00
Satd. Flow (perm)	1770	1583	3539	1583	562	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	117	840	83	250	991
RTOR Reduction (vph)	0	105	0	0	0	0
Lane Group Flow (vph)	98	12	840	83	250	991
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	12.0	12.0	72.0	72.0	89.4	72.0
Effective Green, g (s)	12.0	12.0	72.0	72.0	89.4	72.0
Actuated g/C Ratio	0.10	0.10	0.60	0.60	0.75	0.60
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	158	2123	949	593	2123
v/s Ratio Prot			0.24		c0.06	c0.28
v/s Ratio Perm	c0.06	0.01		0.05	0.25	
v/c Ratio	0.55	0.07	0.40	0.09	0.42	0.47
Uniform Delay, d1	51.4	49.0	12.6	10.1	4.9	13.3
Progression Factor	1.27	2.58	1.05	0.67	2.14	0.08
Incremental Delay, d2	3.7	0.2	0.5	0.2	0.4	0.6
Delay (s)	69.2	126.6	13.7	7.0	10.9	1.6
Level of Service	E	F	B	A	B	A
Approach Delay (s)	100.4		13.1			3.5
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	1130	16	803
v/c Ratio	0.11	0.52	0.15	0.34
Control Delay	22.0	19.2	45.7	16.5
Queue Delay	0.0	0.8	0.0	0.0
Total Delay	22.0	20.0	45.7	16.5
Queue Length 50th (ft)	14	353	12	234
Queue Length 95th (ft)	41	487	m27	320
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	649	2185	339	2348
Starvation Cap Reductn	0	669	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.75	0.05	0.34

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	18	1009	30	15	739
Future Volume (vph)	20	18	1009	30	15	739
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1699		3524		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1699		3524		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	20	1097	33	16	803
RTOR Reduction (vph)	15	0	1	0	0	0
Lane Group Flow (vph)	27	0	1129	0	16	803
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	27.1		71.2		3.1	79.6
Effective Green, g (s)	27.1		71.2		3.1	79.6
Actuated g/C Ratio	0.23		0.59		0.03	0.66
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	383		2090		45	2347
v/s Ratio Prot	c0.02		c0.32		0.01	c0.23
v/s Ratio Perm						
v/c Ratio	0.07		0.54		0.36	0.34
Uniform Delay, d1	36.5		14.6		57.5	8.8
Progression Factor	1.00		1.25		0.80	1.73
Incremental Delay, d2	0.1		1.0		4.6	0.4
Delay (s)	36.6		19.2		50.7	15.6
Level of Service	D		B		D	B
Approach Delay (s)	36.6		19.2			16.3
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	25	462	26	604	860	423	84
v/c Ratio	0.08	0.74	0.07	0.28	0.37	0.23	0.06
Control Delay	39.2	53.8	0.4	12.4	4.7	3.3	0.1
Queue Delay	0.0	0.5	0.0	0.0	0.3	0.2	0.0
Total Delay	39.2	54.2	0.4	12.5	4.9	3.5	0.1
Queue Length 50th (ft)	16	176	0	91	51	17	0
Queue Length 95th (ft)	39	220	0	185	72	30	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2192	2348	1868	1436
Starvation Cap Reductn	0	0	0	0	739	770	0
Spillback Cap Reductn	0	294	0	317	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.55	0.04	0.32	0.53	0.39	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	23	425	24	0	556	791	377	12	0	0	77
Future Volume (vph)	23	425	24	0	556	791	377	12	0	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	462	26	0	604	860	410	13	0	0	84
RTOR Reduction (vph)	0	0	21	0	0	0	19	0	0	0	28
Lane Group Flow (vph)	25	462	5	0	604	860	404	0	0	0	56
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	21.8	21.8	21.8		71.2	79.6	79.6				79.6
Effective Green, g (s)	21.8	21.8	21.8		71.2	79.6	79.6				79.6
Actuated g/C Ratio	0.18	0.18	0.18		0.59	0.66	0.66				0.66
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	321	623	287		2099	2347	1848				1068
v/s Ratio Prot		c0.13			0.17	c0.24					
v/s Ratio Perm	0.01		0.00				0.14				0.03
v/c Ratio	0.08	0.74	0.02		0.29	0.37	0.22				0.05
Uniform Delay, d1	40.8	46.4	40.3		12.0	9.0	8.0				7.0
Progression Factor	1.00	1.00	1.00		1.00	0.44	0.41				1.00
Incremental Delay, d2	0.1	4.7	0.0		0.3	0.4	0.3				0.1
Delay (s)	40.9	51.2	40.3		12.3	4.4	3.5				7.1
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		50.1			12.3	4.1			7.1		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	43	1099	37	68	1274
Future Vol, veh/h	23	43	1099	37	68	1274
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	47	1195	40	74	1385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2056	618	0	0	1235	0
Stage 1	1215	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	48	432	-	-	560	-
Stage 1	243	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 20	432	-	-	560	-
Mov Cap-2 Maneuver	98	-	-	-	-	-
Stage 1	243	-	-	-	-	-
Stage 2	164	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.4	0	3.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	197	560	-
HCM Lane V/C Ratio	-	-	0.364	0.132	-
HCM Control Delay (s)	-	-	33.4	12.4	3.2
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	1.6	0.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	54	13	0	24	0	1107	20	37	1230	0
Future Vol, veh/h	5	0	54	13	0	24	0	1107	20	37	1230	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	59	14	0	26	0	1203	22	40	1337	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2019	2642	669	1963	2631	613	1337	0	0	1225	0	0
Stage 1	1417	1417	-	1214	1214	-	-	-	-	-	-	-
Stage 2	602	1225	-	749	1417	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	34	23	400	38	23	435	512	-	-	565	-	-
Stage 1	144	201	-	193	253	-	-	-	-	-	-	-
Stage 2	453	249	-	370	201	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	25	17	400	26	17	435	512	-	-	565	-	-
Mov Cap-2 Maneuver	25	17	-	26	17	-	-	-	-	-	-	-
Stage 1	144	146	-	193	253	-	-	-	-	-	-	-
Stage 2	426	249	-	229	146	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.7	119.1	0	1.8
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	512	-	-	176	67	565	-	-
HCM Lane V/C Ratio	-	-	-	0.364	0.6	0.071	-	-
HCM Control Delay (s)	0	-	-	36.7	119.1	11.9	1.5	-
HCM Lane LOS	A	-	-	E	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1.5	2.6	0.2	-	-

HCM 6th Signalized Intersection Summary
1: Venice Blvd & Midvale Ave/Girard Ave

03/24/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	27	36	54	14	49	49	878	40	52	1061	18
Future Volume (veh/h)	25	27	36	54	14	49	49	878	40	52	1061	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	29	39	59	15	53	53	954	43	57	1153	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	66	69	109	27	66	399	2855	1273	473	2855	1273
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.80	0.80	0.80	0.80	0.80	0.80
Sat Flow, veh/h	337	651	688	646	269	655	478	3554	1585	565	3554	1585
Grp Volume(v), veh/h	95	0	0	127	0	0	53	954	43	57	1153	20
Grp Sat Flow(s),veh/h/ln	1677	0	0	1569	0	0	478	1777	1585	565	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	3.0	0.0	0.0	4.4	8.7	0.7	3.6	11.3	0.3
Cycle Q Clear(g_c), s	6.3	0.0	0.0	9.3	0.0	0.0	15.7	8.7	0.7	12.3	11.3	0.3
Prop In Lane	0.28		0.41	0.46		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	0	0	202	0	0	399	2855	1273	473	2855	1273
V/C Ratio(X)	0.46	0.00	0.00	0.63	0.00	0.00	0.13	0.33	0.03	0.12	0.40	0.02
Avail Cap(c_a), veh/h	673	0	0	640	0	0	399	2855	1273	473	2855	1273
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	0.0	0.0	52.6	0.0	0.0	5.7	3.2	2.4	4.8	3.4	2.4
Incr Delay (d2), s/veh	1.6	0.0	0.0	3.2	0.0	0.0	0.3	0.1	0.0	0.5	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.1	0.0	0.0	7.0	0.0	0.0	0.8	4.4	0.3	0.8	6.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	0.0	0.0	55.8	0.0	0.0	6.0	3.3	2.4	5.3	3.9	2.4
LnGrp LOS	D	A	A	E	A	A	A	A	A	A	A	A
Approach Vol, veh/h		95			127			1050			1230	
Approach Delay, s/veh		52.9			55.8			3.4			3.9	
Approach LOS		D			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		101.5		18.5		101.5		18.5				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		14.3		8.3		17.7		11.3				
Green Ext Time (p_c), s		22.0		0.6		16.7		0.8				

Intersection Summary		
HCM 6th Ctrl Delay		8.2
HCM 6th LOS		A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	148	63	91	179	37	96	989	97	14	655	65
Future Volume (veh/h)	53	148	63	91	179	37	96	989	97	14	655	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	161	68	99	195	40	104	1075	105	15	712	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	511	216	148	788	667	129	888	528	64	779	347
Arrive On Green	0.07	0.41	0.41	0.08	0.42	0.42	0.07	0.25	0.25	0.04	0.22	0.22
Sat Flow, veh/h	1781	1248	527	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	58	0	229	99	195	40	104	1075	105	15	712	71
Grp Sat Flow(s),veh/h/ln	1781	0	1775	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.8	0.0	10.5	6.5	8.1	1.8	6.9	30.0	5.7	1.0	23.5	4.4
Cycle Q Clear(g_c), s	3.8	0.0	10.5	6.5	8.1	1.8	6.9	30.0	5.7	1.0	23.5	4.4
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	0	726	148	788	667	129	888	528	64	779	347
V/C Ratio(X)	0.46	0.00	0.32	0.67	0.25	0.06	0.80	1.21	0.20	0.23	0.91	0.20
Avail Cap(c_a), veh/h	212	0	726	212	788	667	214	888	528	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	0.0	24.1	53.4	22.5	20.6	54.8	45.0	28.6	56.2	45.7	38.3
Incr Delay (d2), s/veh	2.5	0.0	1.1	5.1	0.8	0.2	10.9	105.1	0.2	1.8	14.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	0.0	8.2	5.6	6.7	1.3	6.3	38.3	4.0	0.9	17.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	0.0	25.2	58.5	23.2	20.8	65.7	150.2	28.7	58.1	60.4	38.6
LnGrp LOS	E	A	C	E	C	C	E	F	C	E	E	D
Approach Vol, veh/h		287			334			1284			798	
Approach Delay, s/veh		31.4			33.4			133.4			58.4	
Approach LOS		C			C			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	56.2	9.6	39.9	15.7	54.8	13.3	36.2				
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9				
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27				
Max Q Clear Time (g_c+I1), s	5.8	10.1	3.0	32.0	8.5	12.5	8.9	25.5				
Green Ext Time (p_c), s	0.1	1.3	0.0	0.0	0.1	1.4	0.1	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			88.1									
HCM 6th LOS			F									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	48	96	17	1021	786	54
v/c Ratio	0.33	0.44	0.03	0.47	0.36	0.06
Control Delay	55.7	17.2	0.3	5.2	13.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	17.3	0.3	5.2	13.3	9.1
Queue Length 50th (ft)	34	0	0	43	147	11
Queue Length 95th (ft)	73	48	m1	80	240	35
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	628	767	2164	2164	974
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	68	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.17	0.02	0.47	0.36	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	88	16	939	723	50
Future Volume (vph)	44	88	16	939	723	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.33	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	618	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	96	17	1021	786	54
RTOR Reduction (vph)	0	88	0	0	0	6
Lane Group Flow (vph)	48	8	17	1021	786	48
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	9.9	9.9	90.5	73.4	73.4	73.4
Effective Green, g (s)	9.9	9.9	90.5	73.4	73.4	73.4
Actuated g/C Ratio	0.08	0.08	0.75	0.61	0.61	0.61
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	146	130	630	2164	2164	968
v/s Ratio Prot			c0.00	c0.29	0.22	
v/s Ratio Perm	c0.03	0.01	0.02			0.03
v/c Ratio	0.33	0.06	0.03	0.47	0.36	0.05
Uniform Delay, d1	51.9	50.8	5.0	12.7	11.6	9.3
Progression Factor	0.98	1.11	0.10	0.32	1.00	1.00
Incremental Delay, d2	1.3	0.2	0.0	0.7	0.5	0.1
Delay (s)	52.2	56.7	0.5	4.8	12.1	9.4
Level of Service	D	E	A	A	B	A
Approach Delay (s)	55.2			4.7	11.9	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	175	155	873	111	125	741
v/c Ratio	0.69	0.43	0.40	0.11	0.25	0.34
Control Delay	78.9	30.1	8.6	8.9	2.1	1.9
Queue Delay	0.0	5.8	0.0	0.0	0.0	0.0
Total Delay	78.9	35.9	8.6	8.9	2.1	1.9
Queue Length 50th (ft)	84	5	65	15	2	16
Queue Length 95th (ft)	217	128	157	54	14	32
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	452	2193	981	860	2193
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	239	3	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.73	0.40	0.11	0.15	0.34

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	161	143	803	102	115	682
Future Volume (vph)	161	143	803	102	115	682
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.29	1.00
Satd. Flow (perm)	1770	1583	3539	1583	546	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	155	873	111	125	741
RTOR Reduction (vph)	0	133	0	0	0	0
Lane Group Flow (vph)	175	22	873	111	125	741
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	17.1	17.1	74.4	74.4	84.3	74.4
Effective Green, g (s)	17.1	17.1	74.4	74.4	84.3	74.4
Actuated g/C Ratio	0.14	0.14	0.62	0.62	0.70	0.62
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	225	2194	981	484	2194
v/s Ratio Prot			c0.25		c0.02	0.21
v/s Ratio Perm	c0.10	0.01		0.07	0.16	
v/c Ratio	0.69	0.10	0.40	0.11	0.26	0.34
Uniform Delay, d1	49.0	44.7	11.5	9.3	6.0	11.0
Progression Factor	1.34	3.97	0.64	0.79	0.22	0.12
Incremental Delay, d2	7.7	0.2	0.5	0.2	0.3	0.4
Delay (s)	73.4	177.7	7.8	7.5	1.6	1.7
Level of Service	E	F	A	A	A	A
Approach Delay (s)	122.4		7.8			1.7
Approach LOS	F		A			A

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	66	1127	20	562
v/c Ratio	0.17	0.51	0.18	0.24
Control Delay	25.4	18.7	58.2	6.6
Queue Delay	0.0	0.9	0.0	0.0
Total Delay	25.4	19.6	58.2	6.6
Queue Length 50th (ft)	26	341	15	68
Queue Length 95th (ft)	61	478	m40	101
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	658	2205	339	2376
Starvation Cap Reductn	0	713	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.76	0.06	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	22	994	43	18	517
Future Volume (vph)	39	22	994	43	18	517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.95		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1717		3517		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1717		3517		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	24	1080	47	20	562
RTOR Reduction (vph)	19	0	2	0	0	0
Lane Group Flow (vph)	47	0	1125	0	20	562
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	26.1		72.0		3.3	80.6
Effective Green, g (s)	26.1		72.0		3.3	80.6
Actuated g/C Ratio	0.22		0.60		0.03	0.67
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	373		2110		48	2377
v/s Ratio Prot	c0.03		c0.32		0.01	c0.16
v/s Ratio Perm						
v/c Ratio	0.13		0.53		0.42	0.24
Uniform Delay, d1	37.8		14.1		57.4	7.7
Progression Factor	1.00		1.26		1.02	0.78
Incremental Delay, d2	0.2		0.9		5.6	0.2
Delay (s)	37.9		18.7		64.4	6.2
Level of Service	D		B		E	A
Approach Delay (s)	37.9		18.7			8.2
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	40	435	22	566	604	448	82
v/c Ratio	0.13	0.73	0.06	0.26	0.25	0.24	0.06
Control Delay	41.0	54.2	0.3	11.9	5.3	4.3	0.1
Queue Delay	0.0	0.4	0.0	0.0	0.3	0.3	0.0
Total Delay	41.0	54.6	0.3	11.9	5.6	4.6	0.1
Queue Length 50th (ft)	27	166	0	82	50	31	0
Queue Length 95th (ft)	56	209	0	170	72	49	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2217	2376	1890	1440
Starvation Cap Reductn	0	0	0	0	1107	810	0
Spillback Cap Reductn	0	302	0	316	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.52	0.04	0.30	0.48	0.41	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	37	400	20	0	521	556	397	15	0	0	75
Future Volume (vph)	37	400	20	0	521	556	397	15	0	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	435	22	0	566	604	432	16	0	0	82
RTOR Reduction (vph)	0	0	18	0	0	0	19	0	0	0	27
Lane Group Flow (vph)	40	435	4	0	566	604	429	0	0	0	55
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	20.8	20.8	20.8		72.0	80.6	80.6				80.6
Effective Green, g (s)	20.8	20.8	20.8		72.0	80.6	80.6				80.6
Actuated g/C Ratio	0.17	0.17	0.17		0.60	0.67	0.67				0.67
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	306	595	274		2123	2377	1871				1082
v/s Ratio Prot		c0.13			c0.16	c0.17					
v/s Ratio Perm	0.02		0.00				0.15				0.03
v/c Ratio	0.13	0.73	0.01		0.27	0.25	0.23				0.05
Uniform Delay, d1	42.0	47.0	41.1		11.4	7.8	7.6				6.7
Progression Factor	1.00	1.00	1.00		1.00	0.60	0.56				1.00
Incremental Delay, d2	0.2	4.6	0.0		0.3	0.3	0.3				0.1
Delay (s)	42.1	51.6	41.1		11.7	5.0	4.6				6.8
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		50.3			11.7	4.8			6.8		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1054	0	0	1064
Future Vol, veh/h	0	0	1054	0	0	1064
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1146	0	0	1157

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1725	573	0	0	1146	0
Stage 1	1146	-	-	-	-	-
Stage 2	579	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	80	463	-	-	605	-
Stage 1	265	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	463	-	-	605	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	265	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					

Minor Lane/Major Mvmt		NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)		-	-	-	605	-
HCM Lane V/C Ratio		-	-	-	-	-
HCM Control Delay (s)		-	-	0	0	-
HCM Lane LOS		-	-	A	A	-
HCM 95th %tile Q(veh)		-	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	75	0	0	0	0	1037	0	4	967	0
Future Vol, veh/h	17	0	75	0	0	0	0	1037	0	4	967	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	82	0	0	0	0	1127	0	4	1051	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1623	2186	526	1661	2186	564	1051	0	0	1127	0	0
Stage 1	1059	1059	-	1127	1127	-	-	-	-	-	-	-
Stage 2	564	1127	-	534	1059	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	68	45	496	64	45	469	658	-	-	616	-	-
Stage 1	240	299	-	218	278	-	-	-	-	-	-	-
Stage 2	478	278	-	498	299	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	44	496	53	44	469	658	-	-	616	-	-
Mov Cap-2 Maneuver	67	44	-	53	44	-	-	-	-	-	-	-
Stage 1	240	294	-	218	278	-	-	-	-	-	-	-
Stage 2	478	278	-	409	294	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.8	0	0	0.1
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	658	-	-	227	-	616	-	-
HCM Lane V/C Ratio	-	-	-	0.441	-	0.007	-	-
HCM Control Delay (s)	0	-	-	32.8	0	10.9	0.1	-
HCM Lane LOS	A	-	-	D	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	2.1	-	0	-	-

HCM 6th Signalized Intersection Summary
1: Venice Blvd & Midvale Ave/Girard Ave 03/24/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	88	34	29	19	23	65	1222	33	101	1211	30
Future Volume (veh/h)	33	88	34	29	19	23	65	1222	33	101	1211	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	96	37	32	21	25	71	1328	36	110	1316	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	129	45	96	63	55	326	2788	1244	322	2788	1244
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.78	0.78	0.78	0.78	0.78	0.78
Sat Flow, veh/h	276	1075	379	448	530	461	404	3554	1585	399	3554	1585
Grp Volume(v), veh/h	169	0	0	78	0	0	71	1328	36	110	1316	33
Grp Sat Flow(s),veh/h/ln	1729	0	0	1439	0	0	404	1777	1585	399	1777	1585
Q Serve(g_s), s	5.7	0.0	0.0	0.0	0.0	0.0	8.7	15.4	0.6	15.7	15.2	0.5
Cycle Q Clear(g_c), s	11.3	0.0	0.0	5.6	0.0	0.0	23.9	15.4	0.6	31.2	15.2	0.5
Prop In Lane	0.21		0.22	0.41		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	0	0	214	0	0	326	2788	1244	322	2788	1244
V/C Ratio(X)	0.69	0.00	0.00	0.36	0.00	0.00	0.22	0.48	0.03	0.34	0.47	0.03
Avail Cap(c_a), veh/h	706	0	0	626	0	0	326	2788	1244	322	2788	1244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	0.0	48.8	0.0	0.0	8.5	4.4	2.8	9.8	4.4	2.8
Incr Delay (d2), s/veh	3.5	0.0	0.0	1.0	0.0	0.0	0.6	0.2	0.0	2.9	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.9	0.0	0.0	4.0	0.0	0.0	1.4	8.2	0.3	2.8	8.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	0.0	49.8	0.0	0.0	9.1	4.7	2.9	12.7	5.0	2.9
LnGrp LOS	D	A	A	D	A	A	A	A	A	B	A	A
Approach Vol, veh/h		169			78			1435			1459	
Approach Delay, s/veh		54.9			49.8			4.8			5.5	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.2		20.8		99.2		20.8				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		33.2		13.3		25.9		7.6				
Green Ext Time (p_c), s		20.0		1.0		22.6		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			9.0									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	156	135	16	41	9	70	910	33	9	940	67
Future Volume (veh/h)	82	156	135	16	41	9	70	910	33	9	940	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	170	147	17	45	10	76	989	36	10	1022	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	376	325	148	767	650	123	935	548	46	803	358
Arrive On Green	0.08	0.41	0.41	0.08	0.41	0.41	0.07	0.26	0.26	0.03	0.23	0.23
Sat Flow, veh/h	1781	926	801	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	89	0	317	17	45	10	76	989	36	10	1022	73
Grp Sat Flow(s),veh/h/ln	1781	0	1726	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.8	0.0	16.0	1.1	1.7	0.4	5.0	31.6	1.8	0.7	27.1	4.5
Cycle Q Clear(g_c), s	5.8	0.0	16.0	1.1	1.7	0.4	5.0	31.6	1.8	0.7	27.1	4.5
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	0	701	148	767	650	123	935	548	46	803	358
V/C Ratio(X)	0.63	0.00	0.45	0.12	0.06	0.02	0.62	1.06	0.07	0.22	1.27	0.20
Avail Cap(c_a), veh/h	212	0	701	212	767	650	214	935	548	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	0.0	25.9	50.9	21.4	21.0	54.3	44.2	26.3	57.2	46.5	37.7
Incr Delay (d2), s/veh	4.3	0.0	2.0	0.3	0.1	0.0	5.0	46.0	0.0	2.3	132.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	0.0	11.1	0.9	1.4	0.3	4.3	27.9	1.3	0.6	39.8	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	0.0	27.9	51.3	21.5	21.0	59.3	90.2	26.3	59.5	179.2	38.0
LnGrp LOS	E	A	C	D	C	C	E	F	C	E	F	D
Approach Vol, veh/h		406			72			1101			1105	
Approach Delay, s/veh		34.5			28.5			86.0			168.8	
Approach LOS		C			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	54.9	8.4	41.5	15.7	54.5	12.9	37.0
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27
Max Q Clear Time (g_c+I1), s	7.8	3.7	2.7	33.6	3.1	18.0	7.0	29.1
Green Ext Time (p_c), s	0.1	0.2	0.0	0.0	0.0	1.9	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	110.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	30	53	18	1026	1215	48
v/c Ratio	0.11	0.18	0.05	0.50	0.59	0.05
Control Delay	44.9	18.3	0.6	3.0	18.8	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	44.9	18.3	0.6	3.0	18.9	11.9
Queue Length 50th (ft)	22	8	0	21	296	12
Queue Length 95th (ft)	m49	40	m1	42	462	37
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	601	565	2069	2069	929
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	13	0	0	151	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.03	0.50	0.63	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	49	17	944	1118	44
Future Volume (vph)	28	49	17	944	1118	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.17	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	319	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	53	18	1026	1215	48
RTOR Reduction (vph)	0	45	0	0	0	4
Lane Group Flow (vph)	30	8	18	1026	1215	44
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	19.0	19.0	81.4	70.2	70.2	70.2
Effective Green, g (s)	19.0	19.0	81.4	70.2	70.2	70.2
Actuated g/C Ratio	0.16	0.16	0.68	0.59	0.59	0.59
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	280	250	351	2070	2070	926
v/s Ratio Prot			c0.00	0.29	c0.34	
v/s Ratio Perm	c0.02	0.01	0.03			0.03
v/c Ratio	0.11	0.03	0.05	0.50	0.59	0.05
Uniform Delay, d1	43.2	42.7	14.0	14.6	15.7	10.6
Progression Factor	1.10	1.65	0.07	0.14	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.1	0.8	1.2	0.1
Delay (s)	47.6	70.4	1.0	2.8	17.0	10.7
Level of Service	D	E	A	A	B	B
Approach Delay (s)	62.2			2.7	16.7	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	86	125	949	103	264	992
v/c Ratio	0.52	0.48	0.45	0.11	0.46	0.47
Control Delay	80.8	31.1	16.9	8.7	14.5	1.6
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	80.8	31.5	16.9	8.7	14.5	1.6
Queue Length 50th (ft)	69	0	340	58	43	12
Queue Length 95th (ft)	122	82	446	64	128	19
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	428	2098	938	855	2098
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	97	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.38	0.45	0.11	0.31	0.47

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	79	115	873	95	243	913
Future Volume (vph)	79	115	873	95	243	913
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.26	1.00
Satd. Flow (perm)	1770	1583	3539	1583	479	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	125	949	103	264	992
RTOR Reduction (vph)	0	113	0	0	0	0
Lane Group Flow (vph)	86	12	949	103	264	992
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	11.2	11.2	71.2	71.2	90.2	71.2
Effective Green, g (s)	11.2	11.2	71.2	71.2	90.2	71.2
Actuated g/C Ratio	0.09	0.09	0.59	0.59	0.75	0.59
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	165	147	2099	939	564	2099
v/s Ratio Prot			0.27		c0.07	c0.28
v/s Ratio Perm	c0.05	0.01		0.07	0.28	
v/c Ratio	0.52	0.08	0.45	0.11	0.47	0.47
Uniform Delay, d1	51.8	49.7	13.6	10.6	5.2	13.8
Progression Factor	1.36	2.91	1.07	0.66	4.30	0.06
Incremental Delay, d2	2.9	0.2	0.6	0.2	0.5	0.6
Delay (s)	73.6	144.8	15.2	7.2	22.9	1.5
Level of Service	E	F	B	A	C	A
Approach Delay (s)	115.8		14.4			6.0
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	1168	17	901
v/c Ratio	0.11	0.54	0.16	0.39
Control Delay	21.8	19.5	45.9	18.0
Queue Delay	0.0	0.8	0.0	0.0
Total Delay	21.8	20.3	45.9	18.0
Queue Length 50th (ft)	14	367	13	280
Queue Length 95th (ft)	43	507	m27	378
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	650	2173	339	2337
Starvation Cap Reductn	0	621	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.07	0.75	0.05	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	19	1042	32	16	829
Future Volume (vph)	21	19	1042	32	16	829
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1698		3523		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1698		3523		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	21	1133	35	17	901
RTOR Reduction (vph)	16	0	1	0	0	0
Lane Group Flow (vph)	28	0	1167	0	17	901
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	27.4		70.8		3.2	79.3
Effective Green, g (s)	27.4		70.8		3.2	79.3
Actuated g/C Ratio	0.23		0.59		0.03	0.66
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	387		2078		47	2338
v/s Ratio Prot	c0.02		c0.33		0.01	c0.25
v/s Ratio Perm						
v/c Ratio	0.07		0.56		0.36	0.39
Uniform Delay, d1	36.3		15.1		57.4	9.3
Progression Factor	1.00		1.22		0.80	1.78
Incremental Delay, d2	0.1		1.1		4.5	0.5
Delay (s)	36.4		19.5		50.6	17.0
Level of Service	D		B		D	B
Approach Delay (s)	36.4		19.5			17.6
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	26	472	27	632	961	481	88
v/c Ratio	0.08	0.75	0.07	0.29	0.41	0.26	0.06
Control Delay	38.9	53.6	0.4	12.8	4.8	3.4	0.1
Queue Delay	0.0	0.5	0.0	0.0	0.2	0.2	0.0
Total Delay	38.9	54.1	0.4	12.8	5.0	3.7	0.1
Queue Length 50th (ft)	17	180	0	97	57	21	0
Queue Length 95th (ft)	40	223	0	197	80	34	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2181	2337	1860	1434
Starvation Cap Reductn	0	0	0	0	622	705	0
Spillback Cap Reductn	0	303	0	325	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.57	0.05	0.34	0.56	0.42	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	24	434	25	0	581	884	430	13	0	0	81
Future Volume (vph)	24	434	25	0	581	884	430	13	0	0	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	472	27	0	632	961	467	14	0	0	88
RTOR Reduction (vph)	0	0	22	0	0	0	19	0	0	0	30
Lane Group Flow (vph)	26	472	5	0	632	961	462	0	0	0	58
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	22.1	22.1	22.1		70.8	79.3	79.3				79.3
Effective Green, g (s)	22.1	22.1	22.1		70.8	79.3	79.3				79.3
Actuated g/C Ratio	0.18	0.18	0.18		0.59	0.66	0.66				0.66
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	325	632	291		2088	2338	1841				1064
v/s Ratio Prot		c0.14			0.18	c0.27					
v/s Ratio Perm	0.01		0.00				0.17				0.04
v/c Ratio	0.08	0.75	0.02		0.30	0.41	0.25				0.05
Uniform Delay, d1	40.5	46.3	40.1		12.3	9.5	8.3				7.2
Progression Factor	1.00	1.00	1.00		1.00	0.42	0.40				1.00
Incremental Delay, d2	0.1	4.8	0.0		0.4	0.5	0.3				0.1
Delay (s)	40.6	51.1	40.1		12.7	4.5	3.6				7.3
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		50.0			12.7	4.2			7.3		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1158	0	0	1325
Future Vol, veh/h	0	0	1158	0	0	1325
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1259	0	0	1440

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1979	630	0	0	1259	0
Stage 1	1259	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	54	424	-	-	548	-
Stage 1	231	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	54	424	-	-	548	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	231	-	-	-	-	-
Stage 2	443	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	548	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	57	0	0	0	0	1153	0	0	1293	0
Future Vol, veh/h	5	0	57	0	0	0	0	1153	0	0	1293	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	62	0	0	0	0	1253	0	0	1405	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2032	2658	703	1956	2658	627	1405	0	0	1253	0	0
Stage 1	1405	1405	-	1253	1253	-	-	-	-	-	-	-
Stage 2	627	1253	-	703	1405	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	33	22	380	38	22	426	482	-	-	551	-	-
Stage 1	147	204	-	182	242	-	-	-	-	-	-	-
Stage 2	438	242	-	394	204	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	22	380	32	22	426	482	-	-	551	-	-
Mov Cap-2 Maneuver	33	22	-	32	22	-	-	-	-	-	-	-
Stage 1	147	204	-	182	242	-	-	-	-	-	-	-
Stage 2	438	242	-	330	204	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.7	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	482	-	-	206	-	551	-	-
HCM Lane V/C Ratio	-	-	-	0.327	-	-	-	-
HCM Control Delay (s)	0	-	-	30.7	0	0	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	-	0	-	-

HCM 6th Signalized Intersection Summary
1: Venice Blvd & Midvale Ave/Girard Ave

03/24/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	27	36	54	14	71	49	878	40	37	1061	18
Future Volume (veh/h)	25	27	36	54	14	71	49	878	40	37	1061	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	29	39	59	15	77	53	954	43	40	1153	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	75	78	104	28	94	389	2804	1251	462	2804	1251
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.79	0.79	0.79	0.79	0.79	0.79
Sat Flow, veh/h	318	652	675	542	241	815	478	3554	1585	565	3554	1585
Grp Volume(v), veh/h	95	0	0	151	0	0	53	954	43	40	1153	20
Grp Sat Flow(s),veh/h/ln	1645	0	0	1599	0	0	478	1777	1585	565	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	0.0	4.7	9.3	0.7	2.6	12.2	0.3
Cycle Q Clear(g_c), s	6.3	0.0	0.0	10.9	0.0	0.0	16.8	9.3	0.7	11.9	12.2	0.3
Prop In Lane	0.28		0.41	0.39		0.51	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	0	0	226	0	0	389	2804	1251	462	2804	1251
V/C Ratio(X)	0.42	0.00	0.00	0.67	0.00	0.00	0.14	0.34	0.03	0.09	0.41	0.02
Avail Cap(c_a), veh/h	668	0	0	647	0	0	389	2804	1251	462	2804	1251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	0.0	0.0	51.6	0.0	0.0	6.6	3.7	2.7	5.4	4.0	2.7
Incr Delay (d2), s/veh	1.2	0.0	0.0	3.4	0.0	0.0	0.3	0.1	0.0	0.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	0.0	0.0	8.2	0.0	0.0	0.9	5.0	0.3	0.6	6.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	0.0	0.0	55.0	0.0	0.0	6.9	3.8	2.8	5.7	4.4	2.7
LnGrp LOS	D	A	A	E	A	A	A	A	A	A	A	A
Approach Vol, veh/h		95			151			1050			1213	
Approach Delay, s/veh		50.9			55.0			3.9			4.4	
Approach LOS		D			E			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.8		20.2		99.8		20.2				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		14.2		8.3		18.8		12.9				
Green Ext Time (p_c), s		21.6		0.6		16.5		1.0				

Intersection Summary			
HCM 6th Ctrl Delay			9.0
HCM 6th LOS			A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	148	63	91	179	37	96	989	97	14	655	50
Future Volume (veh/h)	75	148	63	91	179	37	96	989	97	14	655	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	161	68	99	195	40	104	1075	105	15	712	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	511	216	148	775	657	129	888	528	64	779	347
Arrive On Green	0.08	0.41	0.41	0.08	0.41	0.41	0.07	0.25	0.25	0.04	0.22	0.22
Sat Flow, veh/h	1781	1248	527	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	82	0	229	99	195	40	104	1075	105	15	712	54
Grp Sat Flow(s),veh/h/ln	1781	0	1775	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.3	0.0	10.5	6.5	8.2	1.8	6.9	30.0	5.7	1.0	23.5	3.3
Cycle Q Clear(g_c), s	5.3	0.0	10.5	6.5	8.2	1.8	6.9	30.0	5.7	1.0	23.5	3.3
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	0	726	148	775	657	129	888	528	64	779	347
V/C Ratio(X)	0.59	0.00	0.32	0.67	0.25	0.06	0.80	1.21	0.20	0.23	0.91	0.16
Avail Cap(c_a), veh/h	212	0	726	212	775	657	214	888	528	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	0.0	24.1	53.4	23.0	21.1	54.8	45.0	28.6	56.2	45.8	37.9
Incr Delay (d2), s/veh	3.9	0.0	1.1	5.1	0.8	0.2	10.9	105.3	0.2	1.8	14.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.6	0.0	8.2	5.6	6.8	1.3	6.3	38.3	4.0	0.9	17.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	0.0	25.2	58.5	23.7	21.3	65.7	150.3	28.8	58.1	60.5	38.1
LnGrp LOS	E	A	C	E	C	C	E	F	C	E	E	D
Approach Vol, veh/h		311			334			1284			781	
Approach Delay, s/veh		33.7			33.7			133.5			58.9	
Approach LOS		C			C			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	55.4	9.6	39.9	15.7	54.8	13.3	36.2				
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9				
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27				
Max Q Clear Time (g_c+I1), s	7.3	10.2	3.0	32.0	8.5	12.5	8.9	25.5				
Green Ext Time (p_c), s	0.1	1.3	0.0	0.0	0.1	1.4	0.1	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			88.3									
HCM 6th LOS			F									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	48	79	41	1077	747	54
v/c Ratio	0.33	0.39	0.06	0.49	0.34	0.05
Control Delay	54.5	16.6	0.4	4.5	12.5	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	16.6	0.4	4.5	12.5	8.6
Queue Length 50th (ft)	35	0	1	42	134	10
Queue Length 95th (ft)	73	41	1	78	220	34
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	617	795	2194	2194	988
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	65	0	0	14	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.14	0.05	0.49	0.34	0.05

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	73	38	991	687	50
Future Volume (vph)	44	73	38	991	687	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.35	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	654	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	79	41	1077	747	54
RTOR Reduction (vph)	0	72	0	0	0	6
Lane Group Flow (vph)	48	7	41	1077	747	48
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	9.9	9.9	90.5	74.4	74.4	74.4
Effective Green, g (s)	9.9	9.9	90.5	74.4	74.4	74.4
Actuated g/C Ratio	0.08	0.08	0.75	0.62	0.62	0.62
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	146	130	642	2194	2194	981
v/s Ratio Prot			c0.01	c0.30	0.21	
v/s Ratio Perm	c0.03	0.00	0.04			0.03
v/c Ratio	0.33	0.05	0.06	0.49	0.34	0.05
Uniform Delay, d1	51.9	50.7	4.8	12.5	11.0	8.9
Progression Factor	0.96	1.02	0.11	0.28	1.00	1.00
Incremental Delay, d2	1.3	0.2	0.0	0.7	0.4	0.1
Delay (s)	51.1	51.8	0.6	4.2	11.4	9.0
Level of Service	D	D	A	A	B	A
Approach Delay (s)	51.5			4.1	11.2	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	159	155	953	135	125	686
v/c Ratio	0.67	0.45	0.43	0.14	0.27	0.31
Control Delay	81.6	32.0	8.4	8.2	2.9	1.7
Queue Delay	0.0	5.1	0.0	0.0	0.0	0.0
Total Delay	81.6	37.1	8.4	8.2	2.9	1.7
Queue Length 50th (ft)	82	6	84	21	2	14
Queue Length 95th (ft)	202	136	161	58	24	27
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	452	2223	994	842	2223
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	233	2	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.71	0.43	0.14	0.15	0.31

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	146	143	877	124	115	631
Future Volume (vph)	146	143	877	124	115	631
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.26	1.00
Satd. Flow (perm)	1770	1583	3539	1583	493	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	155	953	135	125	686
RTOR Reduction (vph)	0	134	0	0	0	0
Lane Group Flow (vph)	159	21	953	135	125	686
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	16.1	16.1	75.4	75.4	85.3	75.4
Effective Green, g (s)	16.1	16.1	75.4	75.4	85.3	75.4
Actuated g/C Ratio	0.13	0.13	0.63	0.63	0.71	0.63
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	237	212	2223	994	455	2223
v/s Ratio Prot			c0.27		c0.02	0.19
v/s Ratio Perm	c0.09	0.01		0.09	0.17	
v/c Ratio	0.67	0.10	0.43	0.14	0.27	0.31
Uniform Delay, d1	49.4	45.6	11.3	9.1	5.8	10.3
Progression Factor	1.39	4.09	0.62	0.74	0.41	0.12
Incremental Delay, d2	7.0	0.2	0.6	0.3	0.3	0.3
Delay (s)	75.9	186.8	7.6	7.0	2.7	1.5
Level of Service	E	F	A	A	A	A
Approach Delay (s)	130.6		7.6			1.7
Approach LOS	F		A			A

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	66	1088	20	618
v/c Ratio	0.17	0.49	0.18	0.26
Control Delay	26.0	18.0	58.6	6.8
Queue Delay	0.0	0.8	0.0	0.0
Total Delay	26.0	18.8	58.6	6.8
Queue Length 50th (ft)	27	325	15	78
Queue Length 95th (ft)	62	454	m41	114
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	658	2226	339	2397
Starvation Cap Reductn	0	766	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.75	0.06	0.26

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	22	958	43	18	569
Future Volume (vph)	39	22	958	43	18	569
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.95		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1717		3516		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1717		3516		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	24	1041	47	20	618
RTOR Reduction (vph)	19	0	2	0	0	0
Lane Group Flow (vph)	47	0	1086	0	20	618
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	25.4		72.7		3.3	81.3
Effective Green, g (s)	25.4		72.7		3.3	81.3
Actuated g/C Ratio	0.21		0.61		0.03	0.68
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	363		2130		48	2397
v/s Ratio Prot	c0.03		c0.31		0.01	c0.17
v/s Ratio Perm						
v/c Ratio	0.13		0.51		0.42	0.26
Uniform Delay, d1	38.3		13.5		57.4	7.6
Progression Factor	1.00		1.28		1.03	0.82
Incremental Delay, d2	0.2		0.9		5.7	0.3
Delay (s)	38.5		18.1		64.9	6.5
Level of Service	D		B		E	A
Approach Delay (s)	38.5		18.1			8.3
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	40	418	22	543	661	480	82
v/c Ratio	0.14	0.73	0.06	0.24	0.28	0.25	0.06
Control Delay	41.9	54.8	0.3	11.4	5.1	4.3	0.1
Queue Delay	0.0	0.3	0.0	0.0	0.3	0.3	0.0
Total Delay	41.9	55.1	0.3	11.4	5.4	4.5	0.1
Queue Length 50th (ft)	27	159	0	76	54	33	0
Queue Length 95th (ft)	56	204	0	159	75	51	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2238	2397	1906	1443
Starvation Cap Reductn	0	0	0	0	1065	794	0
Spillback Cap Reductn	0	278	0	304	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.49	0.04	0.28	0.50	0.43	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	37	385	20	0	500	608	427	15	0	0	75
Future Volume (vph)	37	385	20	0	500	608	427	15	0	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	418	22	0	543	661	464	16	0	0	82
RTOR Reduction (vph)	0	0	18	0	0	0	18	0	0	0	26
Lane Group Flow (vph)	40	418	4	0	543	661	462	0	0	0	56
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	20.1	20.1	20.1		72.7	81.3	81.3				81.3
Effective Green, g (s)	20.1	20.1	20.1		72.7	81.3	81.3				81.3
Actuated g/C Ratio	0.17	0.17	0.17		0.61	0.68	0.68				0.68
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	296	575	265		2144	2397	1888				1091
v/s Ratio Prot		c0.12			0.15	c0.19					
v/s Ratio Perm	0.02		0.00				0.17				0.03
v/c Ratio	0.14	0.73	0.01		0.25	0.28	0.24				0.05
Uniform Delay, d1	42.5	47.3	41.7		11.0	7.7	7.5				6.5
Progression Factor	1.00	1.00	1.00		1.00	0.60	0.56				1.00
Incremental Delay, d2	0.2	4.6	0.0		0.3	0.3	0.3				0.1
Delay (s)	42.8	51.9	41.7		11.3	4.9	4.5				6.6
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		50.7			11.3	4.7			6.6		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	68	1099	24	45	1078
Future Vol, veh/h	37	68	1099	24	45	1078
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	74	1195	26	49	1172

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1892	611	0	0	1221	0
Stage 1	1208	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	62	437	-	-	567	-
Stage 1	246	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	47	437	-	-	567	-
Mov Cap-2 Maneuver	152	-	-	-	-	-
Stage 1	246	-	-	-	-	-
Stage 2	347	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	28.8		0		1.8	
HCM LOS	D					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	263	567	-
HCM Lane V/C Ratio	-	-	0.434	0.086	-
HCM Control Delay (s)	-	-	28.8	11.9	1.4
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	2.1	0.3	-

Intersection												
Int Delay, s/veh	5.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	75	24	0	45	0	1061	8	18	1004	0
Future Vol, veh/h	17	0	75	24	0	45	0	1061	8	18	1004	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	82	26	0	49	0	1153	9	20	1091	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1708	2293	546	1744	2289	581	1091	0	0	1162	0	0
Stage 1	1131	1131	-	1158	1158	-	-	-	-	-	-	-
Stage 2	577	1162	-	586	1131	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	59	39	482	55	39	457	635	-	-	597	-	-
Stage 1	217	277	-	208	269	-	-	-	-	-	-	-
Stage 2	469	267	-	463	277	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	36	482	43	36	457	635	-	-	597	-	-
Mov Cap-2 Maneuver	49	36	-	43	36	-	-	-	-	-	-	-
Stage 1	217	253	-	208	269	-	-	-	-	-	-	-
Stage 2	419	267	-	352	253	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.1	98.1	0	0.7
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	635	-	-	183	105	597	-	-
HCM Lane V/C Ratio	-	-	-	0.546	0.714	0.033	-	-
HCM Control Delay (s)	0	-	-	46.1	98.1	11.2	0.5	-
HCM Lane LOS	A	-	-	E	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	2.8	3.8	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	88	34	29	19	12	65	1222	33	120	1211	30
Future Volume (veh/h)	33	88	34	29	19	12	65	1222	33	120	1211	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	96	37	32	21	13	71	1328	36	130	1316	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	129	45	107	67	32	326	2787	1243	321	2787	1243
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.78	0.78	0.78	0.78	0.78	0.78
Sat Flow, veh/h	274	1072	378	523	556	265	404	3554	1585	399	3554	1585
Grp Volume(v), veh/h	169	0	0	66	0	0	71	1328	36	130	1316	33
Grp Sat Flow(s),veh/h/ln	1724	0	0	1343	0	0	404	1777	1585	399	1777	1585
Q Serve(g_s), s	6.4	0.0	0.0	0.0	0.0	0.0	8.8	15.5	0.6	20.0	15.2	0.6
Cycle Q Clear(g_c), s	11.4	0.0	0.0	5.0	0.0	0.0	24.0	15.5	0.6	35.5	15.2	0.6
Prop In Lane	0.21		0.22	0.48		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	0	0	206	0	0	326	2787	1243	321	2787	1243
V/C Ratio(X)	0.69	0.00	0.00	0.32	0.00	0.00	0.22	0.48	0.03	0.40	0.47	0.03
Avail Cap(c_a), veh/h	707	0	0	612	0	0	326	2787	1243	321	2787	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	0.0	48.4	0.0	0.0	8.5	4.5	2.9	10.6	4.4	2.9
Incr Delay (d2), s/veh	3.5	0.0	0.0	0.9	0.0	0.0	0.6	0.2	0.0	3.8	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.9	0.0	0.0	3.4	0.0	0.0	1.4	8.2	0.3	3.6	8.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	0.0	49.3	0.0	0.0	9.1	4.7	2.9	14.3	5.0	2.9
LnGrp LOS	D	A	A	D	A	A	A	A	A	B	A	A
Approach Vol, veh/h		169			66			1435			1479	
Approach Delay, s/veh		54.9			49.3			4.9			5.8	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.2		20.8		99.2		20.8				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		37.5		13.4		26.0		7.0				
Green Ext Time (p_c), s		17.9		1.0		22.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	156	135	16	41	9	70	910	33	9	940	86
Future Volume (veh/h)	71	156	135	16	41	9	70	910	33	9	940	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	77	170	147	17	45	10	76	989	36	10	1022	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	376	325	147	771	654	123	935	548	46	803	358
Arrive On Green	0.08	0.41	0.41	0.08	0.41	0.41	0.07	0.26	0.26	0.03	0.23	0.23
Sat Flow, veh/h	1781	926	801	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	77	0	317	17	45	10	76	989	36	10	1022	93
Grp Sat Flow(s),veh/h/ln	1781	0	1726	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.0	0.0	16.0	1.1	1.7	0.4	5.0	31.6	1.8	0.7	27.1	5.8
Cycle Q Clear(g_c), s	5.0	0.0	16.0	1.1	1.7	0.4	5.0	31.6	1.8	0.7	27.1	5.8
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	137	0	702	147	771	654	123	935	548	46	803	358
V/C Ratio(X)	0.56	0.00	0.45	0.12	0.06	0.02	0.62	1.06	0.07	0.22	1.27	0.26
Avail Cap(c_a), veh/h	212	0	702	212	771	654	214	935	548	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	25.9	51.0	21.2	20.9	54.3	44.2	26.3	57.2	46.5	38.2
Incr Delay (d2), s/veh	3.4	0.0	2.0	0.3	0.1	0.0	5.0	46.0	0.0	2.3	132.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	0.0	11.1	0.9	1.4	0.3	4.3	27.9	1.3	0.6	39.8	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	0.0	27.9	51.3	21.4	20.9	59.3	90.2	26.3	59.5	179.2	38.6
LnGrp LOS	E	A	C	D	C	C	E	F	C	E	F	D
Approach Vol, veh/h		394			72			1101			1125	
Approach Delay, s/veh		33.5			28.4			86.0			166.5	
Approach LOS		C			C			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.9	55.2	8.4	41.5	15.6	54.5	12.9	37.0				
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9				
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27				
Max Q Clear Time (g_c+I1), s	7.0	3.7	2.7	33.6	3.1	18.0	7.0	29.1				
Green Ext Time (p_c), s	0.1	0.2	0.0	0.0	0.0	1.9	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			110.4									
HCM 6th LOS			F									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	30	74	7	999	1264	48
v/c Ratio	0.11	0.24	0.02	0.49	0.62	0.05
Control Delay	43.9	16.4	0.7	3.4	20.5	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	43.9	16.4	0.7	3.4	20.6	12.7
Queue Length 50th (ft)	22	11	0	22	325	13
Queue Length 95th (ft)	m42	44	m0	44	508	39
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	614	542	2028	2028	910
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	47	0	0	136	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.13	0.01	0.49	0.67	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	68	6	919	1163	44
Future Volume (vph)	28	68	6	919	1163	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	287	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	74	7	999	1264	48
RTOR Reduction (vph)	0	62	0	0	0	4
Lane Group Flow (vph)	30	12	7	999	1264	44
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	19.0	19.0	81.4	68.8	68.8	68.8
Effective Green, g (s)	19.0	19.0	81.4	68.8	68.8	68.8
Actuated g/C Ratio	0.16	0.16	0.68	0.57	0.57	0.57
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	280	250	350	2029	2029	907
v/s Ratio Prot			c0.00	0.28	c0.36	
v/s Ratio Perm	c0.02	0.01	0.01			0.03
v/c Ratio	0.11	0.05	0.02	0.49	0.62	0.05
Uniform Delay, d1	43.2	42.8	14.9	15.2	17.0	11.2
Progression Factor	1.07	1.67	0.09	0.15	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0	0.8	1.5	0.1
Delay (s)	46.6	71.6	1.4	3.1	18.4	11.3
Level of Service	D	E	A	A	B	B
Approach Delay (s)	64.4			3.1	18.2	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	107	125	911	91	264	1061
v/c Ratio	0.58	0.45	0.44	0.10	0.45	0.52
Control Delay	78.3	26.9	16.6	9.0	12.8	1.9
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	78.3	27.3	16.6	9.0	12.8	1.9
Queue Length 50th (ft)	86	0	320	48	37	16
Queue Length 95th (ft)	139	66	428	59	118	25
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	428	2057	920	860	2057
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	98	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.38	0.44	0.10	0.31	0.52

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	98	115	838	84	243	976
Future Volume (vph)	98	115	838	84	243	976
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.27	1.00
Satd. Flow (perm)	1770	1583	3539	1583	500	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	125	911	91	264	1061
RTOR Reduction (vph)	0	112	0	0	0	0
Lane Group Flow (vph)	107	13	911	91	264	1061
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	12.6	12.6	69.8	69.8	88.8	69.8
Effective Green, g (s)	12.6	12.6	69.8	69.8	88.8	69.8
Actuated g/C Ratio	0.10	0.10	0.58	0.58	0.74	0.58
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	185	166	2058	920	571	2058
v/s Ratio Prot			0.26		c0.07	c0.30
v/s Ratio Perm	c0.06	0.01		0.06	0.27	
v/c Ratio	0.58	0.08	0.44	0.10	0.46	0.52
Uniform Delay, d1	51.2	48.5	14.1	11.1	5.5	15.0
Progression Factor	1.31	2.63	1.01	0.64	3.36	0.07
Incremental Delay, d2	4.3	0.2	0.6	0.2	0.5	0.7
Delay (s)	71.3	127.5	14.9	7.3	19.0	1.8
Level of Service	E	F	B	A	B	A
Approach Delay (s)	101.6		14.2			5.2
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	1217	17	874
v/c Ratio	0.11	0.57	0.16	0.38
Control Delay	21.4	20.4	46.8	17.3
Queue Delay	0.0	0.8	0.0	0.0
Total Delay	21.4	21.2	46.8	17.3
Queue Length 50th (ft)	14	388	13	265
Queue Length 95th (ft)	42	534	m26	359
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	650	2152	339	2316
Starvation Cap Reductn	0	565	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.07	0.77	0.05	0.38

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	19	1087	32	16	804
Future Volume (vph)	21	19	1087	32	16	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1698		3524		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1698		3524		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	21	1182	35	17	874
RTOR Reduction (vph)	16	0	1	0	0	0
Lane Group Flow (vph)	28	0	1216	0	17	874
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	28.1		70.1		3.2	78.6
Effective Green, g (s)	28.1		70.1		3.2	78.6
Actuated g/C Ratio	0.23		0.58		0.03	0.65
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	397		2058		47	2318
v/s Ratio Prot	c0.02		c0.35		0.01	c0.25
v/s Ratio Perm						
v/c Ratio	0.07		0.59		0.36	0.38
Uniform Delay, d1	35.8		15.8		57.4	9.5
Progression Factor	1.00		1.21		0.82	1.66
Incremental Delay, d2	0.1		1.2		4.5	0.4
Delay (s)	35.9		20.4		51.7	16.2
Level of Service	D		C		D	B
Approach Delay (s)	35.9		20.4			16.9
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	26	492	27	659	934	466	88
v/c Ratio	0.08	0.75	0.07	0.31	0.40	0.25	0.06
Control Delay	38.2	53.3	0.4	13.3	4.8	3.4	0.1
Queue Delay	0.0	0.6	0.0	0.1	0.2	0.2	0.0
Total Delay	38.2	53.9	0.4	13.3	5.1	3.7	0.1
Queue Length 50th (ft)	17	187	0	104	57	21	0
Queue Length 95th (ft)	40	231	0	210	80	34	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2160	2316	1844	1431
Starvation Cap Reductn	0	0	0	0	636	707	0
Spillback Cap Reductn	0	308	0	341	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.59	0.05	0.36	0.56	0.41	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	24	453	25	0	606	859	416	13	0	0	81
Future Volume (vph)	24	453	25	0	606	859	416	13	0	0	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	492	27	0	659	934	452	14	0	0	88
RTOR Reduction (vph)	0	0	22	0	0	0	20	0	0	0	30
Lane Group Flow (vph)	26	492	5	0	659	934	446	0	0	0	58
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	22.8	22.8	22.8		70.1	78.6	78.6				78.6
Effective Green, g (s)	22.8	22.8	22.8		70.1	78.6	78.6				78.6
Actuated g/C Ratio	0.19	0.19	0.19		0.58	0.65	0.65				0.65
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	336	652	300		2067	2318	1825				1055
v/s Ratio Prot		c0.14			0.19	c0.26					
v/s Ratio Perm	0.01		0.00				0.16				0.04
v/c Ratio	0.08	0.75	0.02		0.32	0.40	0.24				0.05
Uniform Delay, d1	40.0	46.0	39.5		12.7	9.7	8.5				7.4
Progression Factor	1.00	1.00	1.00		1.00	0.42	0.39				1.00
Incremental Delay, d2	0.1	5.0	0.0		0.4	0.5	0.3				0.1
Delay (s)	40.1	50.9	39.5		13.2	4.6	3.6				7.5
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		49.8			13.2	4.2			7.5		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	43	1182	37	68	1362
Future Vol, veh/h	23	43	1182	37	68	1362
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	47	1285	40	74	1480

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2193	663	0	0	1325	0
Stage 1	1305	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	39	404	-	-	517	-
Stage 1	218	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 8	404	-	-	517	-
Mov Cap-2 Maneuver	51	-	-	-	-	-
Stage 1	218	-	-	-	-	-
Stage 2	70	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	74.3	0	5.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	118	517	-
HCM Lane V/C Ratio	-	-	0.608	0.143	-
HCM Control Delay (s)	-	-	74.3	13.1	4.8
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	3	0.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	57	13	0	24	0	1190	20	37	1316	0
Future Vol, veh/h	5	0	57	13	0	24	0	1190	20	37	1316	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	62	14	0	26	0	1293	22	40	1430	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2157	2825	715	2099	2814	658	1430	0	0	1315	0	0
Stage 1	1510	1510	-	1304	1304	-	-	-	-	-	-	-
Stage 2	647	1315	-	795	1510	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	27	17	373	30	18	407	471	-	-	522	-	-
Stage 1	126	181	-	169	229	-	-	-	-	-	-	-
Stage 2	426	226	-	347	181	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	18	11	373	18	11	407	471	-	-	522	-	-
Mov Cap-2 Maneuver	18	11	-	18	11	-	-	-	-	-	-	-
Stage 1	126	113	-	169	229	-	-	-	-	-	-	-
Stage 2	399	226	-	181	113	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	50.3	223.9	0	2.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	471	-	-	144	47	522	-	-
HCM Lane V/C Ratio	-	-	-	0.468	0.856	0.077	-	-
HCM Control Delay (s)	0	-	-	50.3	223.9	12.5	2.2	-
HCM Lane LOS	A	-	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	2.2	3.5	0.2	-	-

HCM 6th Signalized Intersection Summary
1: Venice Blvd & Midvale Ave/Girard Ave

03/24/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	31	41	61	16	56	56	1001	46	60	1209	20
Future Volume (veh/h)	29	31	41	61	16	56	56	1001	46	60	1209	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	34	45	66	17	61	61	1088	50	65	1314	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	74	77	115	30	75	332	2800	1249	403	2800	1249
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.79	0.79	0.79	0.79	0.79	0.79
Sat Flow, veh/h	339	635	664	615	259	642	410	3554	1585	494	3554	1585
Grp Volume(v), veh/h	111	0	0	144	0	0	61	1088	50	65	1314	22
Grp Sat Flow(s),veh/h/ln	1637	0	0	1516	0	0	410	1777	1585	494	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	3.5	0.0	0.0	7.1	11.2	0.8	5.5	14.9	0.4
Cycle Q Clear(g_c), s	7.5	0.0	0.0	11.0	0.0	0.0	22.0	11.2	0.8	16.8	14.9	0.4
Prop In Lane	0.29		0.41	0.46		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	0	0	220	0	0	332	2800	1249	403	2800	1249
V/C Ratio(X)	0.49	0.00	0.00	0.65	0.00	0.00	0.18	0.39	0.04	0.16	0.47	0.02
Avail Cap(c_a), veh/h	669	0	0	634	0	0	332	2800	1249	403	2800	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	0.0	0.0	51.6	0.0	0.0	8.0	3.9	2.8	6.5	4.3	2.7
Incr Delay (d2), s/veh	1.6	0.0	0.0	3.3	0.0	0.0	0.5	0.2	0.0	0.9	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.9	0.0	0.0	7.9	0.0	0.0	1.1	6.0	0.4	1.2	8.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	0.0	0.0	54.9	0.0	0.0	8.4	4.0	2.8	7.3	4.8	2.8
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		111			144			1199			1401	
Approach Delay, s/veh		51.7			54.9			4.2			4.9	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.7		20.3		99.7		20.3				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		18.8		9.5		24.0		13.0				
Green Ext Time (p_c), s		25.0		0.7		18.8		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			9.0									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	169	72	104	204	42	109	1129	110	16	747	74
Future Volume (veh/h)	61	169	72	104	204	42	109	1129	110	16	747	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	184	78	113	222	46	118	1227	120	17	812	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	491	208	148	754	639	144	929	546	71	803	358
Arrive On Green	0.07	0.39	0.39	0.08	0.40	0.40	0.08	0.26	0.26	0.04	0.23	0.23
Sat Flow, veh/h	1781	1247	529	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	66	0	262	113	222	46	118	1227	120	17	812	80
Grp Sat Flow(s),veh/h/ln	1781	0	1775	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.3	0.0	12.6	7.5	9.6	2.1	7.8	31.4	6.4	1.1	27.1	4.9
Cycle Q Clear(g_c), s	4.3	0.0	12.6	7.5	9.6	2.1	7.8	31.4	6.4	1.1	27.1	4.9
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	132	0	699	148	754	639	144	929	546	71	803	358
V/C Ratio(X)	0.50	0.00	0.37	0.76	0.29	0.07	0.82	1.32	0.22	0.24	1.01	0.22
Avail Cap(c_a), veh/h	212	0	699	212	754	639	214	929	546	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	25.9	53.8	24.3	22.0	54.3	44.3	27.9	55.9	46.5	37.9
Incr Delay (d2), s/veh	2.9	0.0	1.5	9.5	1.0	0.2	14.1	151.9	0.2	1.7	34.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.0	9.5	6.7	8.0	1.5	7.3	49.6	4.5	1.0	22.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	0.0	27.4	63.3	25.2	22.2	68.4	196.2	28.1	57.6	81.2	38.2
LnGrp LOS	E	A	C	E	C	C	E	F	C	E	F	D
Approach Vol, veh/h		328			381			1465			909	
Approach Delay, s/veh		33.2			36.2			172.2			76.9	
Approach LOS		C			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	54.1	10.1	41.3	15.7	53.0	14.3	37.0
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27
Max Q Clear Time (g_c+I1), s	6.3	11.6	3.1	33.4	9.5	14.6	9.8	29.1
Green Ext Time (p_c), s	0.1	1.4	0.0	0.0	0.1	1.6	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	112.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	54	109	20	1165	895	63
v/c Ratio	0.34	0.45	0.03	0.56	0.43	0.07
Control Delay	56.8	18.8	0.3	6.5	15.6	10.5
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	56.8	18.8	0.3	6.5	15.6	10.5
Queue Length 50th (ft)	40	0	0	61	187	14
Queue Length 95th (ft)	75	52	m1	89	299	43
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	637	695	2087	2087	940
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	78	0	0	26	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.19	0.03	0.56	0.43	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	100	18	1072	823	58
Future Volume (vph)	50	100	18	1072	823	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.28	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	524	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	109	20	1165	895	63
RTOR Reduction (vph)	0	99	0	0	0	7
Lane Group Flow (vph)	54	10	20	1165	895	56
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	11.0	11.0	89.4	70.8	70.8	70.8
Effective Green, g (s)	11.0	11.0	89.4	70.8	70.8	70.8
Actuated g/C Ratio	0.09	0.09	0.75	0.59	0.59	0.59
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	145	583	2088	2088	933
v/s Ratio Prot			c0.01	c0.33	0.25	
v/s Ratio Perm	c0.03	0.01	0.02			0.04
v/c Ratio	0.33	0.07	0.03	0.56	0.43	0.06
Uniform Delay, d1	51.1	49.8	6.5	15.0	13.5	10.5
Progression Factor	1.03	1.44	0.09	0.33	1.00	1.00
Incremental Delay, d2	1.2	0.2	0.0	1.0	0.6	0.1
Delay (s)	53.9	71.7	0.6	5.9	14.1	10.6
Level of Service	D	E	A	A	B	B
Approach Delay (s)	65.8			5.9	13.9	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	199	177	996	126	143	843
v/c Ratio	0.73	0.45	0.47	0.13	0.32	0.40
Control Delay	89.2	36.8	12.9	13.2	4.5	2.2
Queue Delay	0.0	78.4	0.0	0.0	0.0	0.0
Total Delay	89.2	115.2	12.9	13.2	4.5	2.2
Queue Length 50th (ft)	164	80	80	19	5	17
Queue Length 95th (ft)	241	138	240	m79	35	37
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	469	2116	946	814	2116
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	370	11	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	1.79	0.47	0.13	0.18	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	183	163	916	116	132	776
Future Volume (vph)	183	163	916	116	132	776
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.24	1.00
Satd. Flow (perm)	1770	1583	3539	1583	450	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	199	177	996	126	143	843
RTOR Reduction (vph)	0	150	0	0	0	0
Lane Group Flow (vph)	199	27	996	126	143	843
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	18.6	18.6	71.8	71.8	82.8	71.8
Effective Green, g (s)	18.6	18.6	71.8	71.8	82.8	71.8
Actuated g/C Ratio	0.16	0.16	0.60	0.60	0.69	0.60
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	245	2117	947	431	2117
v/s Ratio Prot			c0.28		c0.03	0.24
v/s Ratio Perm	c0.11	0.02		0.08	0.20	
v/c Ratio	0.73	0.11	0.47	0.13	0.33	0.40
Uniform Delay, d1	48.3	43.6	13.5	10.5	7.0	12.7
Progression Factor	1.57	5.54	0.82	1.03	0.60	0.12
Incremental Delay, d2	8.8	0.2	0.6	0.2	0.4	0.5
Delay (s)	84.6	241.6	11.7	11.1	4.6	2.0
Level of Service	F	F	B	B	A	A
Approach Delay (s)	158.5		11.6			2.4
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	75	1286	22	638
v/c Ratio	0.18	0.62	0.20	0.28
Control Delay	24.1	23.1	58.5	7.5
Queue Delay	0.0	0.5	0.0	0.0
Total Delay	24.1	23.6	58.5	7.5
Queue Length 50th (ft)	29	457	17	88
Queue Length 95th (ft)	66	571	m41	121
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	660	2066	339	2312
Starvation Cap Reductn	0	348	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.75	0.06	0.28

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	44	25	1134	49	20	587
Future Volume (vph)	44	25	1134	49	20	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.95		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1717		3517		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1717		3517		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	27	1233	53	22	638
RTOR Reduction (vph)	21	0	2	0	0	0
Lane Group Flow (vph)	54	0	1284	0	22	638
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	28.3		68.3		4.8	78.4
Effective Green, g (s)	28.3		68.3		4.8	78.4
Actuated g/C Ratio	0.24		0.57		0.04	0.65
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	404		2001		70	2312
v/s Ratio Prot	c0.03		c0.37		0.01	c0.18
v/s Ratio Perm						
v/c Ratio	0.13		0.64		0.31	0.28
Uniform Delay, d1	36.2		17.5		56.0	8.8
Progression Factor	1.00		1.19		1.03	0.77
Incremental Delay, d2	0.2		1.5		2.5	0.3
Delay (s)	36.3		22.4		60.0	7.1
Level of Service	D		C		E	A
Approach Delay (s)	36.3		22.4			8.8
Approach LOS	D		C			A

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	46	496	25	647	688	508	92
v/c Ratio	0.14	0.75	0.06	0.31	0.30	0.28	0.06
Control Delay	39.3	53.2	0.3	14.7	6.0	5.0	0.1
Queue Delay	0.0	0.5	0.0	0.1	0.3	0.3	0.0
Total Delay	39.3	53.7	0.3	14.8	6.3	5.3	0.1
Queue Length 50th (ft)	30	189	0	138	61	38	0
Queue Length 95th (ft)	60	233	0	207	87	60	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2077	2312	1840	1430
Starvation Cap Reductn	0	0	0	0	968	712	0
Spillback Cap Reductn	0	287	0	368	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.58	0.04	0.38	0.51	0.45	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	42	456	23	0	595	633	451	17	0	0	85
Future Volume (vph)	42	456	23	0	595	633	451	17	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	496	25	0	647	688	490	18	0	0	92
RTOR Reduction (vph)	0	0	20	0	0	0	20	0	0	0	32
Lane Group Flow (vph)	46	496	5	0	647	688	488	0	0	0	60
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	23.0	23.0	23.0		68.3	78.4	78.4				78.4
Effective Green, g (s)	23.0	23.0	23.0		68.3	78.4	78.4				78.4
Actuated g/C Ratio	0.19	0.19	0.19		0.57	0.65	0.65				0.65
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	339	657	303		2014	2312	1820				1052
v/s Ratio Prot		c0.14			c0.18	c0.19					
v/s Ratio Perm	0.03		0.00				0.18				0.04
v/c Ratio	0.14	0.75	0.02		0.32	0.30	0.27				0.06
Uniform Delay, d1	40.3	45.8	39.3		13.6	9.0	8.7				7.5
Progression Factor	1.00	1.00	1.00		1.00	0.59	0.56				1.00
Incremental Delay, d2	0.2	4.9	0.0		0.4	0.3	0.4				0.1
Delay (s)	40.4	50.8	39.3		14.1	5.6	5.3				7.6
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		49.4			14.1	5.5			7.6		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1202	0	0	1212
Future Vol, veh/h	0	0	1202	0	0	1212
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1307	0	0	1317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1966	654	0	0	1307	0
Stage 1	1307	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	55	409	-	-	525	-
Stage 1	217	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	55	409	-	-	525	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	217	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	525	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	85	0	0	0	0	1183	0	5	1102	0
Future Vol, veh/h	19	0	85	0	0	0	0	1183	0	5	1102	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	92	0	0	0	0	1286	0	5	1198	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1851	2494	599	1895	2494	643	1198	0	0	1286	0	0
Stage 1	1208	1208	-	1286	1286	-	-	-	-	-	-	-
Stage 2	643	1286	-	609	1208	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	46	29	445	42	29	416	578	-	-	535	-	-
Stage 1	194	254	-	174	233	-	-	-	-	-	-	-
Stage 2	428	233	-	449	254	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	28	445	33	28	416	578	-	-	535	-	-
Mov Cap-2 Maneuver	45	28	-	33	28	-	-	-	-	-	-	-
Stage 1	194	247	-	174	233	-	-	-	-	-	-	-
Stage 2	428	233	-	346	247	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	60.4	0	0	0.3
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	578	-	-	170	-	535	-	-
HCM Lane V/C Ratio	-	-	-	0.665	-	0.01	-	-
HCM Control Delay (s)	0	-	-	60.4	0	11.8	0.2	-
HCM Lane LOS	A	-	-	F	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	3.9	-	0	-	-

HCM 6th Signalized Intersection Summary
1: Venice Blvd & Midvale Ave/Girard Ave

03/24/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	101	38	33	22	26	74	1393	37	115	1381	35
Future Volume (veh/h)	37	101	38	33	22	26	74	1393	37	115	1381	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	110	41	36	24	28	80	1514	40	125	1501	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	144	49	100	67	58	264	2742	1223	260	2742	1223
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	276	1087	373	433	505	438	337	3554	1585	332	3554	1585
Grp Volume(v), veh/h	191	0	0	88	0	0	80	1514	40	125	1501	38
Grp Sat Flow(s),veh/h/ln	1735	0	0	1375	0	0	337	1777	1585	332	1777	1585
Q Serve(g_s), s	6.1	0.0	0.0	0.0	0.0	0.0	14.8	20.3	0.7	28.8	20.0	0.7
Cycle Q Clear(g_c), s	12.7	0.0	0.0	6.7	0.0	0.0	34.8	20.3	0.7	49.2	20.0	0.7
Prop In Lane	0.21		0.21	0.41		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	0	0	225	0	0	264	2742	1223	260	2742	1223
V/C Ratio(X)	0.72	0.00	0.00	0.39	0.00	0.00	0.30	0.55	0.03	0.48	0.55	0.03
Avail Cap(c_a), veh/h	708	0	0	614	0	0	264	2742	1223	260	2742	1223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	0.0	47.8	0.0	0.0	12.3	5.5	3.2	15.2	5.4	3.2
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.1	0.0	0.0	1.1	0.4	0.0	6.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.8	0.0	0.0	4.5	0.0	0.0	2.1	10.5	0.4	4.6	10.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	0.0	0.0	48.9	0.0	0.0	13.4	5.8	3.2	21.5	6.2	3.3
LnGrp LOS	D	A	A	D	A	A	B	A	A	C	A	A
Approach Vol, veh/h		191			88			1634			1664	
Approach Delay, s/veh		54.1			48.9			6.1			7.3	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		97.7		22.3		97.7		22.3				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		51.2		14.7		36.8		8.7				
Green Ext Time (p_c), s		8.8		1.2		19.3		0.5				

Intersection Summary			
HCM 6th Ctrl Delay			10.3
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	179	155	18	47	11	80	1038	37	11	1071	76
Future Volume (veh/h)	93	179	155	18	47	11	80	1038	37	11	1071	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	195	168	20	51	12	87	1128	40	12	1164	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	375	323	148	761	645	126	926	545	54	803	358
Arrive On Green	0.08	0.40	0.40	0.08	0.41	0.41	0.07	0.26	0.26	0.03	0.23	0.23
Sat Flow, veh/h	1781	927	799	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	101	0	363	20	51	12	87	1128	40	12	1164	83
Grp Sat Flow(s),veh/h/ln	1781	0	1727	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.6	0.0	19.0	1.2	2.0	0.5	5.7	31.3	2.0	0.8	27.1	5.1
Cycle Q Clear(g_c), s	6.6	0.0	19.0	1.2	2.0	0.5	5.7	31.3	2.0	0.8	27.1	5.1
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	0	698	148	761	645	126	926	545	54	803	358
V/C Ratio(X)	0.70	0.00	0.52	0.14	0.07	0.02	0.69	1.22	0.07	0.22	1.45	0.23
Avail Cap(c_a), veh/h	212	0	698	212	761	645	214	926	545	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	27.0	51.0	21.7	21.3	54.5	44.4	26.5	56.8	46.5	37.9
Incr Delay (d2), s/veh	5.6	0.0	2.5	0.4	0.2	0.1	6.5	107.9	0.1	2.1	209.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	0.0	12.8	1.0	1.7	0.4	5.0	40.3	1.4	0.7	53.6	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	0.0	29.4	51.4	21.9	21.3	61.0	152.2	26.6	58.9	256.1	38.3
LnGrp LOS	E	A	C	D	C	C	E	F	C	E	F	D
Approach Vol, veh/h		464			83			1255			1259	
Approach Delay, s/veh		36.0			28.9			141.9			239.9	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	54.5	8.9	41.2	15.7	54.2	13.1	37.0
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27
Max Q Clear Time (g_c+I1), s	8.6	4.0	2.8	33.3	3.2	21.0	7.7	29.1
Green Ext Time (p_c), s	0.1	0.3	0.0	0.0	0.0	2.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	163.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	35	61	20	1168	1386	54
v/c Ratio	0.11	0.18	0.07	0.59	0.70	0.06
Control Delay	42.8	17.0	0.8	3.8	23.8	13.7
Queue Delay	0.0	0.1	0.0	0.0	0.7	0.0
Total Delay	42.8	17.1	0.8	3.8	24.5	13.7
Queue Length 50th (ft)	25	11	0	25	393	15
Queue Length 95th (ft)	m43	m32	m1	49	607	44
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	606	496	1971	1971	886
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	107	0	0	272	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.12	0.04	0.59	0.82	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	56	18	1075	1275	50
Future Volume (vph)	32	56	18	1075	1275	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.12	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	217	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	61	20	1168	1386	54
RTOR Reduction (vph)	0	50	0	0	0	4
Lane Group Flow (vph)	35	11	20	1168	1386	50
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	21.6	21.6	78.8	66.9	66.9	66.9
Effective Green, g (s)	21.6	21.6	78.8	66.9	66.9	66.9
Actuated g/C Ratio	0.18	0.18	0.66	0.56	0.56	0.56
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	318	284	296	1972	1972	882
v/s Ratio Prot			c0.01	0.33	c0.39	
v/s Ratio Perm	c0.02	0.01	0.04			0.03
v/c Ratio	0.11	0.04	0.07	0.59	0.70	0.06
Uniform Delay, d1	41.2	40.6	20.4	17.5	19.3	12.1
Progression Factor	1.11	1.76	0.07	0.13	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.1	1.1	2.1	0.1
Delay (s)	45.7	71.6	1.5	3.5	21.4	12.3
Level of Service	D	E	A	A	C	B
Approach Delay (s)	62.2			3.5	21.1	
Approach LOS	E			A	C	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	97	143	1082	117	301	1132
v/c Ratio	0.55	0.50	0.54	0.13	0.55	0.57
Control Delay	79.6	29.0	18.4	8.7	27.1	2.1
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0
Total Delay	79.6	29.6	18.4	8.7	27.1	2.1
Queue Length 50th (ft)	79	0	410	61	90	15
Queue Length 95th (ft)	134	86	531	m65	193	27
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	443	2001	895	806	2001
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	104	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.42	0.54	0.13	0.37	0.57

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	89	132	995	108	277	1041
Future Volume (vph)	89	132	995	108	277	1041
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.20	1.00
Satd. Flow (perm)	1770	1583	3539	1583	377	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	143	1082	117	301	1132
RTOR Reduction (vph)	0	129	0	0	0	0
Lane Group Flow (vph)	97	14	1082	117	301	1132
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	11.9	11.9	67.9	67.9	89.5	67.9
Effective Green, g (s)	11.9	11.9	67.9	67.9	89.5	67.9
Actuated g/C Ratio	0.10	0.10	0.57	0.57	0.75	0.57
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175	156	2002	895	531	2002
v/s Ratio Prot			0.31		c0.10	0.32
v/s Ratio Perm	c0.05	0.01		0.07	c0.32	
v/c Ratio	0.55	0.09	0.54	0.13	0.57	0.57
Uniform Delay, d1	51.5	49.1	16.3	12.2	7.4	16.6
Progression Factor	1.33	2.92	0.96	0.57	4.46	0.07
Incremental Delay, d2	3.7	0.3	0.9	0.3	1.0	0.8
Delay (s)	72.4	143.8	16.5	7.2	33.8	2.0
Level of Service	E	F	B	A	C	A
Approach Delay (s)	115.0		15.6			8.7
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	1329	20	1026
v/c Ratio	0.11	0.63	0.18	0.45
Control Delay	20.4	22.6	46.9	19.7
Queue Delay	0.0	0.8	0.0	0.0
Total Delay	20.4	23.5	46.9	19.7
Queue Length 50th (ft)	15	441	15	345
Queue Length 95th (ft)	45	602	m28	442
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	651	2101	339	2268
Starvation Cap Reductn	0	440	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.08	0.80	0.06	0.45

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	22	1187	36	18	944
Future Volume (vph)	24	22	1187	36	18	944
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1698		3524		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1698		3524		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	24	1290	39	20	1026
RTOR Reduction (vph)	18	0	1	0	0	0
Lane Group Flow (vph)	32	0	1328	0	20	1026
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	29.8		68.3		3.3	76.9
Effective Green, g (s)	29.8		68.3		3.3	76.9
Actuated g/C Ratio	0.25		0.57		0.03	0.64
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	421		2005		48	2267
v/s Ratio Prot	c0.02		c0.38		0.01	c0.29
v/s Ratio Perm						
v/c Ratio	0.08		0.66		0.42	0.45
Uniform Delay, d1	34.6		17.9		57.4	10.9
Progression Factor	1.00		1.17		0.82	1.65
Incremental Delay, d2	0.1		1.6		5.4	0.6
Delay (s)	34.6		22.6		52.2	18.6
Level of Service	C		C		D	B
Approach Delay (s)	34.6		22.6			19.2
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	30	538	32	717	1093	545	100
v/c Ratio	0.08	0.77	0.08	0.34	0.48	0.30	0.07
Control Delay	37.0	52.5	0.4	14.6	5.2	3.7	0.1
Queue Delay	0.0	5.5	0.0	0.1	0.2	0.2	0.0
Total Delay	37.0	58.1	0.4	14.7	5.4	4.0	0.1
Queue Length 50th (ft)	19	204	0	121	70	26	0
Queue Length 95th (ft)	43	248	0	239	96	42	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2109	2268	1807	1424
Starvation Cap Reductn	0	0	0	0	424	596	0
Spillback Cap Reductn	0	525	0	365	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.88	0.05	0.41	0.59	0.45	0.07

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	28	495	29	0	660	1006	488	14	0	0	92
Future Volume (vph)	28	495	29	0	660	1006	488	14	0	0	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	538	32	0	717	1093	530	15	0	0	100
RTOR Reduction (vph)	0	0	25	0	0	0	20	0	0	0	36
Lane Group Flow (vph)	30	538	7	0	717	1093	525	0	0	0	64
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	24.5	24.5	24.5		68.3	76.9	76.9				76.9
Effective Green, g (s)	24.5	24.5	24.5		68.3	76.9	76.9				76.9
Actuated g/C Ratio	0.20	0.20	0.20		0.57	0.64	0.64				0.64
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	361	700	323		2014	2267	1786				1032
v/s Ratio Prot		c0.16			0.20	c0.31					
v/s Ratio Perm	0.02		0.00				0.19				0.04
v/c Ratio	0.08	0.77	0.02		0.36	0.48	0.29				0.06
Uniform Delay, d1	38.7	45.1	38.2		14.0	11.2	9.5				8.1
Progression Factor	1.00	1.00	1.00		1.00	0.38	0.37				1.00
Incremental Delay, d2	0.1	5.1	0.0		0.5	0.7	0.4				0.1
Delay (s)	38.8	50.2	38.2		14.5	5.0	3.9				8.2
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		48.9			14.5	4.6			8.2		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1319	0	0	1510
Future Vol, veh/h	0	0	1319	0	0	1510
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1434	0	0	1641

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2255	717	0	0	1434	0
Stage 1	1434	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	35	372	-	-	470	-
Stage 1	186	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	35	372	-	-	470	-
Mov Cap-2 Maneuver	129	-	-	-	-	-
Stage 1	186	-	-	-	-	-
Stage 2	393	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	470	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	65	0	0	0	0	1313	0	0	1474	0
Future Vol, veh/h	6	0	65	0	0	0	0	1313	0	0	1474	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	71	0	0	0	0	1427	0	0	1602	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2316	3029	801	2228	3029	714	1602	0	0	1427	0	0
Stage 1	1602	1602	-	1427	1427	-	-	-	-	-	-	-
Stage 2	714	1427	-	801	1602	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	20	13	327	24	13	374	404	-	-	473	-	-
Stage 1	110	163	-	142	199	-	-	-	-	-	-	-
Stage 2	388	199	-	344	163	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	20	13	327	19	13	374	404	-	-	473	-	-
Mov Cap-2 Maneuver	20	13	-	19	13	-	-	-	-	-	-	-
Stage 1	110	163	-	142	199	-	-	-	-	-	-	-
Stage 2	388	199	-	270	163	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	57.1	0	0	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	404	-	-	142	-	473	-	-
HCM Lane V/C Ratio	-	-	-	0.543	-	-	-	-
HCM Control Delay (s)	0	-	-	57.1	0	0	-	-
HCM Lane LOS	A	-	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.7	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	31	41	61	16	78	56	1001	46	45	1209	20
Future Volume (veh/h)	29	31	41	61	16	78	56	1001	46	45	1209	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	34	45	66	17	85	61	1088	50	49	1314	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	82	84	111	31	102	323	2752	1227	394	2752	1227
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	322	632	650	533	235	786	410	3554	1585	494	3554	1585
Grp Volume(v), veh/h	111	0	0	168	0	0	61	1088	50	49	1314	22
Grp Sat Flow(s),veh/h/ln	1604	0	0	1554	0	0	410	1777	1585	494	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	5.0	0.0	0.0	7.5	12.0	0.9	4.3	15.9	0.4
Cycle Q Clear(g_c), s	7.5	0.0	0.0	12.5	0.0	0.0	23.4	12.0	0.9	16.2	15.9	0.4
Prop In Lane	0.29		0.41	0.39		0.51	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	0	0	244	0	0	323	2752	1227	394	2752	1227
V/C Ratio(X)	0.45	0.00	0.00	0.69	0.00	0.00	0.19	0.40	0.04	0.12	0.48	0.02
Avail Cap(c_a), veh/h	662	0	0	641	0	0	323	2752	1227	394	2752	1227
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	0.0	0.0	50.7	0.0	0.0	9.0	4.4	3.2	7.0	4.8	3.1
Incr Delay (d2), s/veh	1.3	0.0	0.0	3.5	0.0	0.0	0.5	0.2	0.0	0.6	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	0.0	0.0	8.9	0.0	0.0	1.2	6.6	0.4	0.9	8.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	0.0	0.0	54.2	0.0	0.0	9.5	4.6	3.2	7.7	5.4	3.1
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		111			168			1199			1385	
Approach Delay, s/veh		49.9			54.2			4.8			5.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		98.0		22.0		98.0		22.0				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		18.2		9.5		25.4		14.5				
Green Ext Time (p_c), s		24.7		0.7		18.4		1.1				

Intersection Summary			
HCM 6th Ctrl Delay			9.8
HCM 6th LOS			A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	169	72	104	204	42	109	1129	110	16	747	59
Future Volume (veh/h)	83	169	72	104	204	42	109	1129	110	16	747	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	184	78	113	222	46	118	1227	120	17	812	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	491	208	148	745	631	144	929	546	71	803	358
Arrive On Green	0.08	0.39	0.39	0.08	0.40	0.40	0.08	0.26	0.26	0.04	0.23	0.23
Sat Flow, veh/h	1781	1247	529	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	90	0	262	113	222	46	118	1227	120	17	812	64
Grp Sat Flow(s),veh/h/ln	1781	0	1775	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.9	0.0	12.6	7.5	9.7	2.2	7.8	31.4	6.4	1.1	27.1	3.9
Cycle Q Clear(g_c), s	5.9	0.0	12.6	7.5	9.7	2.2	7.8	31.4	6.4	1.1	27.1	3.9
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	0	699	148	745	631	144	929	546	71	803	358
V/C Ratio(X)	0.64	0.00	0.37	0.76	0.30	0.07	0.82	1.32	0.22	0.24	1.01	0.18
Avail Cap(c_a), veh/h	212	0	699	212	745	631	214	929	546	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	0.0	25.9	53.8	24.7	22.4	54.3	44.3	27.9	55.9	46.5	37.5
Incr Delay (d2), s/veh	4.6	0.0	1.5	9.5	1.0	0.2	14.1	151.9	0.2	1.7	34.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.1	0.0	9.5	6.7	8.0	1.5	7.3	49.6	4.5	1.0	22.4	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.2	0.0	27.4	63.3	25.7	22.6	68.4	196.2	28.1	57.6	81.2	37.7
LnGrp LOS	E	A	C	E	C	C	E	F	C	E	F	D
Approach Vol, veh/h		352			381			1465			893	
Approach Delay, s/veh		35.2			36.5			172.2			77.6	
Approach LOS		D			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	53.5	10.1	41.3	15.7	53.0	14.3	37.0
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27
Max Q Clear Time (g_c+I1), s	7.9	11.7	3.1	33.4	9.5	14.6	9.8	29.1
Green Ext Time (p_c), s	0.1	1.4	0.0	0.0	0.1	1.6	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	112.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	54	92	43	1222	855	63
v/c Ratio	0.34	0.40	0.07	0.58	0.40	0.07
Control Delay	55.0	18.0	0.4	5.7	14.7	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	18.1	0.4	5.7	14.7	9.9
Queue Length 50th (ft)	41	1	1	46	172	14
Queue Length 95th (ft)	73	44	m1	87	276	42
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	626	721	2116	2116	953
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	75	0	0	37	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.17	0.06	0.58	0.41	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	85	40	1124	787	58
Future Volume (vph)	50	85	40	1124	787	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.30	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	558	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	92	43	1222	855	63
RTOR Reduction (vph)	0	84	0	0	0	7
Lane Group Flow (vph)	54	8	43	1222	855	56
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	11.0	11.0	89.4	71.8	71.8	71.8
Effective Green, g (s)	11.0	11.0	89.4	71.8	71.8	71.8
Actuated g/C Ratio	0.09	0.09	0.75	0.60	0.60	0.60
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	145	593	2117	2117	947
v/s Ratio Prot			c0.01	c0.35	0.24	
v/s Ratio Perm	c0.03	0.01	0.04			0.04
v/c Ratio	0.33	0.06	0.07	0.58	0.40	0.06
Uniform Delay, d1	51.1	49.8	6.3	14.8	12.8	10.0
Progression Factor	1.00	1.31	0.07	0.29	1.00	1.00
Incremental Delay, d2	1.2	0.2	0.0	1.0	0.6	0.1
Delay (s)	52.1	65.3	0.5	5.3	13.3	10.2
Level of Service	D	E	A	A	B	B
Approach Delay (s)	60.4			5.1	13.1	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	183	177	1076	150	143	788
v/c Ratio	0.70	0.46	0.50	0.16	0.34	0.37
Control Delay	93.1	39.2	12.2	12.1	6.5	1.9
Queue Delay	0.0	75.4	0.0	0.0	0.0	0.0
Total Delay	93.1	114.6	12.2	12.1	6.5	1.9
Queue Length 50th (ft)	151	84	96	24	10	14
Queue Length 95th (ft)	227	145	254	88	47	31
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	469	2146	960	799	2146
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	356	3	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	1.57	0.50	0.16	0.18	0.37

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	168	163	990	138	132	725
Future Volume (vph)	168	163	990	138	132	725
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.22	1.00
Satd. Flow (perm)	1770	1583	3539	1583	404	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	177	1076	150	143	788
RTOR Reduction (vph)	0	151	0	0	0	0
Lane Group Flow (vph)	183	26	1076	150	143	788
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	17.6	17.6	72.8	72.8	83.8	72.8
Effective Green, g (s)	17.6	17.6	72.8	72.8	83.8	72.8
Actuated g/C Ratio	0.15	0.15	0.61	0.61	0.70	0.61
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	259	232	2146	960	407	2146
v/s Ratio Prot			c0.30		c0.03	0.22
v/s Ratio Perm	c0.10	0.02		0.09	0.21	
v/c Ratio	0.71	0.11	0.50	0.16	0.35	0.37
Uniform Delay, d1	48.7	44.4	13.3	10.3	7.0	11.9
Progression Factor	1.65	5.76	0.78	0.96	1.01	0.11
Incremental Delay, d2	8.0	0.2	0.7	0.3	0.5	0.5
Delay (s)	88.3	256.1	11.1	10.2	7.6	1.8
Level of Service	F	F	B	B	A	A
Approach Delay (s)	170.8		11.0			2.7
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	75	1246	22	695
v/c Ratio	0.18	0.60	0.20	0.30
Control Delay	24.5	22.3	58.9	7.8
Queue Delay	0.0	0.5	0.0	0.0
Total Delay	24.5	22.8	58.9	7.8
Queue Length 50th (ft)	30	436	16	102
Queue Length 95th (ft)	66	547	m44	135
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	660	2085	339	2330
Starvation Cap Reductn	0	393	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.74	0.06	0.30

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	44	25	1098	49	20	639
Future Volume (vph)	44	25	1098	49	20	639
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.95		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1717		3517		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1717		3517		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	27	1193	53	22	695
RTOR Reduction (vph)	21	0	2	0	0	0
Lane Group Flow (vph)	54	0	1244	0	22	695
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	27.7		68.9		4.8	79.0
Effective Green, g (s)	27.7		68.9		4.8	79.0
Actuated g/C Ratio	0.23		0.57		0.04	0.66
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	396		2019		70	2329
v/s Ratio Prot	c0.03		c0.35		0.01	c0.20
v/s Ratio Perm						
v/c Ratio	0.14		0.62		0.31	0.30
Uniform Delay, d1	36.7		16.8		56.0	8.7
Progression Factor	1.00		1.20		1.03	0.81
Incremental Delay, d2	0.2		1.4		2.5	0.3
Delay (s)	36.8		21.6		60.4	7.4
Level of Service	D		C		E	A
Approach Delay (s)	36.8		21.6			9.0
Approach LOS	D		C			A

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	46	479	25	624	745	541	92
v/c Ratio	0.14	0.75	0.07	0.30	0.32	0.29	0.06
Control Delay	39.9	53.6	0.3	14.2	5.8	4.9	0.1
Queue Delay	0.0	0.2	0.0	0.1	0.3	0.3	0.0
Total Delay	39.9	53.8	0.3	14.3	6.1	5.2	0.1
Queue Length 50th (ft)	30	182	0	130	65	40	0
Queue Length 95th (ft)	60	226	0	197	91	61	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2096	2330	1854	1433
Starvation Cap Reductn	0	0	0	0	922	692	0
Spillback Cap Reductn	0	192	0	361	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.51	0.04	0.36	0.53	0.47	0.06

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	42	441	23	0	574	685	481	17	0	0	85
Future Volume (vph)	42	441	23	0	574	685	481	17	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	479	25	0	624	745	523	18	0	0	92
RTOR Reduction (vph)	0	0	20	0	0	0	19	0	0	0	31
Lane Group Flow (vph)	46	479	5	0	624	745	522	0	0	0	61
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	22.4	22.4	22.4		68.9	79.0	79.0				79.0
Effective Green, g (s)	22.4	22.4	22.4		68.9	79.0	79.0				79.0
Actuated g/C Ratio	0.19	0.19	0.19		0.57	0.66	0.66				0.66
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	330	640	295		2031	2329	1834				1060
v/s Ratio Prot		c0.14			0.18	c0.21					
v/s Ratio Perm	0.03		0.00				0.19				0.04
v/c Ratio	0.14	0.75	0.02		0.31	0.32	0.28				0.06
Uniform Delay, d1	40.8	46.1	39.8		13.2	8.9	8.6				7.3
Progression Factor	1.00	1.00	1.00		1.00	0.58	0.55				1.00
Incremental Delay, d2	0.2	4.8	0.0		0.4	0.4	0.4				0.1
Delay (s)	40.9	50.9	39.8		13.6	5.5	5.1				7.4
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		49.6			13.6	5.3			7.4		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	68	1247	24	45	1226
Future Vol, veh/h	37	68	1247	24	45	1226
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	74	1355	26	49	1333

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2133	691	0	0	1381	0
Stage 1	1368	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	42	387	-	-	492	-
Stage 1	202	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 26	387	-	-	492	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	202	-	-	-	-	-
Stage 2	259	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.5	0	2.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	211	492	-
HCM Lane V/C Ratio	-	-	0.541	0.099	-
HCM Control Delay (s)	-	-	40.5	13.1	2.3
HCM Lane LOS	-	-	E	B	A
HCM 95th %tile Q(veh)	-	-	2.9	0.3	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	11.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	85	24	0	45	0	1207	8	19	1139	0
Future Vol, veh/h	19	0	85	24	0	45	0	1207	8	19	1139	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	92	26	0	49	0	1312	9	21	1238	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1936	2601	619	1978	2597	661	1238	0	0	1321	0	0
Stage 1	1280	1280	-	1317	1317	-	-	-	-	-	-	-
Stage 2	656	1321	-	661	1280	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	40	24	432	37	25	405	558	-	-	519	-	-
Stage 1	175	235	-	166	225	-	-	-	-	-	-	-
Stage 2	421	224	-	418	235	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	21	432	~ 26	22	405	558	-	-	519	-	-
Mov Cap-2 Maneuver	32	21	-	~ 26	22	-	-	-	-	-	-	-
Stage 1	175	204	-	166	225	-	-	-	-	-	-	-
Stage 2	370	224	-	286	204	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	107.5	252.3	0	1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	558	-	-	132	67	519	-	-
HCM Lane V/C Ratio	-	-	-	0.856	1.119	0.04	-	-
HCM Control Delay (s)	0	-	-	107.5	252.3	12.2	0.8	-
HCM Lane LOS	A	-	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	5.4	5.8	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	101	38	33	22	15	74	1393	37	134	1381	35
Future Volume (veh/h)	37	101	38	33	22	15	74	1393	37	134	1381	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	110	41	36	24	16	80	1514	40	146	1501	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	144	49	110	70	36	264	2741	1222	260	2741	1222
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	275	1084	372	492	525	271	337	3554	1585	332	3554	1585
Grp Volume(v), veh/h	191	0	0	76	0	0	80	1514	40	146	1501	38
Grp Sat Flow(s),veh/h/ln	1731	0	0	1289	0	0	337	1777	1585	332	1777	1585
Q Serve(g_s), s	6.7	0.0	0.0	0.0	0.0	0.0	14.8	20.4	0.7	37.5	20.1	0.7
Cycle Q Clear(g_c), s	12.8	0.0	0.0	6.1	0.0	0.0	34.9	20.4	0.7	57.9	20.1	0.7
Prop In Lane	0.21		0.21	0.47		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	0	0	216	0	0	264	2741	1222	260	2741	1222
V/C Ratio(X)	0.72	0.00	0.00	0.35	0.00	0.00	0.30	0.55	0.03	0.56	0.55	0.03
Avail Cap(c_a), veh/h	709	0	0	601	0	0	264	2741	1222	260	2741	1222
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	0.0	47.4	0.0	0.0	12.3	5.5	3.2	17.0	5.4	3.2
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.0	0.0	0.0	1.1	0.4	0.0	8.5	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.8	0.0	0.0	3.9	0.0	0.0	2.1	10.5	0.4	6.0	10.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	0.0	0.0	48.4	0.0	0.0	13.4	5.8	3.2	25.5	6.2	3.3
LnGrp LOS	D	A	A	D	A	A	B	A	A	C	A	A
Approach Vol, veh/h		191			76			1634			1685	
Approach Delay, s/veh		54.1			48.4			6.1			7.8	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		97.6		22.4		97.6		22.4				
Change Period (Y+Rc), s		* 5.1		* 6.4		* 5.1		* 6.4				
Max Green Setting (Gmax), s		* 61		* 48		* 61		* 48				
Max Q Clear Time (g_c+I1), s		59.9		14.8		36.9		8.1				
Green Ext Time (p_c), s		1.0		1.2		19.3		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			10.4
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	179	155	18	47	11	80	1038	37	11	1071	95
Future Volume (veh/h)	82	179	155	18	47	11	80	1038	37	11	1071	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	195	168	20	51	12	87	1128	40	12	1164	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	375	323	148	764	647	126	926	545	54	803	358
Arrive On Green	0.08	0.40	0.40	0.08	0.41	0.41	0.07	0.26	0.26	0.03	0.23	0.23
Sat Flow, veh/h	1781	927	799	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	89	0	363	20	51	12	87	1128	40	12	1164	103
Grp Sat Flow(s),veh/h/ln	1781	0	1727	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.8	0.0	19.0	1.2	2.0	0.5	5.7	31.3	2.0	0.8	27.1	6.5
Cycle Q Clear(g_c), s	5.8	0.0	19.0	1.2	2.0	0.5	5.7	31.3	2.0	0.8	27.1	6.5
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	0	698	148	764	647	126	926	545	54	803	358
V/C Ratio(X)	0.63	0.00	0.52	0.14	0.07	0.02	0.69	1.22	0.07	0.22	1.45	0.29
Avail Cap(c_a), veh/h	212	0	698	212	764	647	214	926	545	203	803	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	0.0	27.0	51.0	21.6	21.2	54.5	44.4	26.5	56.8	46.5	38.5
Incr Delay (d2), s/veh	4.2	0.0	2.5	0.4	0.2	0.1	6.5	107.9	0.1	2.1	209.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	0.0	12.8	1.0	1.7	0.4	5.0	40.3	1.4	0.7	53.6	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	0.0	29.4	51.4	21.8	21.2	61.0	152.2	26.6	58.9	256.1	38.9
LnGrp LOS	E	A	C	D	C	C	E	F	C	E	F	D
Approach Vol, veh/h		452			83			1255			1279	
Approach Delay, s/veh		35.0			28.8			141.9			236.8	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	54.7	8.9	41.2	15.7	54.2	13.1	37.0
Change Period (Y+Rc), s	5.7	5.7	5.3	* 9.9	5.7	5.7	4.6	* 9.9
Max Green Setting (Gmax), s	14.3	38.3	13.7	* 27	14.3	38.3	14.4	* 27
Max Q Clear Time (g_c+I1), s	7.8	4.0	2.8	33.3	3.2	21.0	7.7	29.1
Green Ext Time (p_c), s	0.1	0.3	0.0	0.0	0.0	2.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	162.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	35	82	8	1141	1435	54
v/c Ratio	0.11	0.23	0.03	0.59	0.74	0.06
Control Delay	42.3	15.1	0.9	4.2	25.9	14.4
Queue Delay	0.0	0.1	0.0	0.0	1.1	0.0
Total Delay	42.3	15.2	0.9	4.2	27.0	14.4
Queue Length 50th (ft)	25	12	0	27	427	16
Queue Length 95th (ft)	m39	m32	m0	51	#706	46
Internal Link Dist (ft)	1050			10	10	
Turn Bay Length (ft)			40			50
Base Capacity (vph)	634	619	476	1932	1932	868
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	141	0	0	261	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.17	0.02	0.59	0.86	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Washington Blvd & Girard Ave

03/24/2025

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	75	7	1050	1320	50
Future Volume (vph)	32	75	7	1050	1320	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	187	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	82	8	1141	1435	54
RTOR Reduction (vph)	0	67	0	0	0	4
Lane Group Flow (vph)	35	15	8	1141	1435	50
Turn Type	Perm	Perm	pm+pt	NA	NA	Perm
Protected Phases			3	6	6	
Permitted Phases	4	4	6			6
Actuated Green, G (s)	21.6	21.6	78.8	65.6	65.6	65.6
Effective Green, g (s)	21.6	21.6	78.8	65.6	65.6	65.6
Actuated g/C Ratio	0.18	0.18	0.66	0.55	0.55	0.55
Clearance Time (s)	5.0	5.0	5.3	9.3	9.3	9.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	318	284	296	1934	1934	865
v/s Ratio Prot			c0.00	0.32	c0.41	
v/s Ratio Perm	c0.02	0.01	0.01			0.03
v/c Ratio	0.11	0.05	0.03	0.59	0.74	0.06
Uniform Delay, d1	41.2	40.7	21.6	18.2	20.7	12.7
Progression Factor	1.10	1.75	0.10	0.15	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	1.2	2.6	0.1
Delay (s)	45.3	71.2	2.3	3.9	23.4	12.9
Level of Service	D	E	A	A	C	B
Approach Delay (s)	63.4			3.9	23.0	
Approach LOS	E			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	117	143	1043	105	301	1200
v/c Ratio	0.60	0.48	0.53	0.12	0.55	0.61
Control Delay	77.1	24.8	17.9	8.9	25.4	2.5
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0
Total Delay	77.1	25.5	17.9	8.9	25.4	2.5
Queue Length 50th (ft)	94	0	388	52	84	19
Queue Length 95th (ft)	146	66	509	m56	m185	34
Internal Link Dist (ft)	1598		10			10
Turn Bay Length (ft)	175	185		160	30	
Base Capacity (vph)	368	443	1962	877	810	1962
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	108	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.43	0.53	0.12	0.37	0.61

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	108	132	960	97	277	1104
Future Volume (vph)	108	132	960	97	277	1104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.21	1.00
Satd. Flow (perm)	1770	1583	3539	1583	395	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	143	1043	105	301	1200
RTOR Reduction (vph)	0	127	0	0	0	0
Lane Group Flow (vph)	117	16	1043	105	301	1200
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA
Protected Phases			2		4	2
Permitted Phases	3	3		2	2	
Actuated Green, G (s)	13.2	13.2	66.6	66.6	88.2	66.6
Effective Green, g (s)	13.2	13.2	66.6	66.6	88.2	66.6
Actuated g/C Ratio	0.11	0.11	0.55	0.55	0.74	0.55
Clearance Time (s)	5.3	5.3	8.3	8.3	5.0	8.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	174	1964	878	537	1964
v/s Ratio Prot			0.29		c0.10	c0.34
v/s Ratio Perm	c0.07	0.01		0.07	0.31	
v/c Ratio	0.60	0.09	0.53	0.12	0.56	0.61
Uniform Delay, d1	50.9	48.0	16.8	12.7	7.4	18.0
Progression Factor	1.28	2.58	0.90	0.56	4.31	0.07
Incremental Delay, d2	5.1	0.2	0.9	0.2	0.9	1.0
Delay (s)	70.4	124.3	16.1	7.3	32.8	2.3
Level of Service	E	F	B	A	C	A
Approach Delay (s)	100.0		15.3			8.4
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	1378	20	999
v/c Ratio	0.11	0.66	0.18	0.45
Control Delay	19.9	23.7	47.6	19.1
Queue Delay	0.0	0.9	0.0	0.0
Total Delay	19.9	24.6	47.6	19.1
Queue Length 50th (ft)	15	466	14	330
Queue Length 95th (ft)	44	634	m27	425
Internal Link Dist (ft)	492	271		267
Turn Bay Length (ft)			30	
Base Capacity (vph)	651	2076	339	2242
Starvation Cap Reductn	0	382	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.08	0.81	0.06	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	22	1232	36	18	919
Future Volume (vph)	24	22	1232	36	18	919
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		9.3		5.3	9.3
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1698		3524		1770	3539
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1698		3524		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	24	1339	39	20	999
RTOR Reduction (vph)	18	0	1	0	0	0
Lane Group Flow (vph)	32	0	1377	0	20	999
Turn Type	Prot		NA		Prot	NA
Protected Phases	7		2		1	6
Permitted Phases						
Actuated Green, G (s)	30.7		67.4		3.3	76.0
Effective Green, g (s)	30.7		67.4		3.3	76.0
Actuated g/C Ratio	0.26		0.56		0.03	0.63
Clearance Time (s)	4.0		9.3		5.3	9.3
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	434		1979		48	2241
v/s Ratio Prot	c0.02		c0.39		0.01	c0.28
v/s Ratio Perm						
v/c Ratio	0.07		0.70		0.42	0.45
Uniform Delay, d1	33.9		18.9		57.4	11.2
Progression Factor	1.00		1.15		0.83	1.55
Incremental Delay, d2	0.1		1.9		5.3	0.6
Delay (s)	33.9		23.7		52.9	18.0
Level of Service	C		C		D	B
Approach Delay (s)	33.9		23.7			18.7
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL2	EBL	EBR	NBT	SBT	SBR	SER2
Lane Group Flow (vph)	30	559	32	745	1066	530	100
v/c Ratio	0.08	0.77	0.08	0.36	0.48	0.30	0.07
Control Delay	36.2	51.9	0.3	15.3	5.3	3.8	0.1
Queue Delay	0.0	28.6	0.0	0.1	0.2	0.2	0.0
Total Delay	36.2	80.5	0.3	15.4	5.5	4.0	0.1
Queue Length 50th (ft)	19	212	0	130	70	26	0
Queue Length 95th (ft)	42	257	0	254	96	42	0
Internal Link Dist (ft)		657		207	271		
Turn Bay Length (ft)	65	65	55			85	
Base Capacity (vph)	585	1135	593	2083	2242	1786	1420
Starvation Cap Reductn	0	0	0	0	437	596	0
Spillback Cap Reductn	0	592	0	365	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	1.03	0.05	0.43	0.59	0.45	0.07

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SBR2	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	28	514	29	0	685	981	474	14	0	0	92
Future Volume (vph)	28	514	29	0	685	981	474	14	0	0	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Lane Util. Factor	1.00	0.97	1.00		0.95	0.95	0.88				1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85				0.86
Flt Protected	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (prot)	1770	3433	1583		3539	3539	2787				1611
Flt Permitted	0.95	0.95	1.00		1.00	1.00	1.00				1.00
Satd. Flow (perm)	1770	3433	1583		3539	3539	2787				1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	559	32	0	745	1066	515	15	0	0	100
RTOR Reduction (vph)	0	0	25	0	0	0	21	0	0	0	37
Lane Group Flow (vph)	30	559	7	0	745	1066	509	0	0	0	63
Turn Type	Perm	Prot	Perm		NA	NA	Perm				Perm
Protected Phases		3			2	6					
Permitted Phases	3		3				6				6
Actuated Green, G (s)	25.4	25.4	25.4		67.4	76.0	76.0				76.0
Effective Green, g (s)	25.4	25.4	25.4		67.4	76.0	76.0				76.0
Actuated g/C Ratio	0.21	0.21	0.21		0.56	0.63	0.63				0.63
Clearance Time (s)	9.3	9.3	9.3		9.3	9.3	9.3				9.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0				3.0
Lane Grp Cap (vph)	374	726	335		1987	2241	1765				1020
v/s Ratio Prot		c0.16			0.21	c0.30					
v/s Ratio Perm	0.02		0.00				0.18				0.04
v/c Ratio	0.08	0.77	0.02		0.37	0.48	0.29				0.06
Uniform Delay, d1	37.9	44.5	37.4		14.6	11.5	9.9				8.4
Progression Factor	1.00	1.00	1.00		1.00	0.38	0.36				1.00
Incremental Delay, d2	0.1	4.9	0.0		0.5	0.7	0.4				0.1
Delay (s)	38.0	49.5	37.5		15.1	5.0	3.9				8.5
Level of Service	D	D	D		B	A	A				A
Approach Delay (s)		48.3			15.1	4.7			8.5		
Approach LOS		D			B	A			A		

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	43	1343	37	68	1547
Future Vol, veh/h	23	43	1343	37	68	1547
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	47	1460	40	74	1682

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2469	750	0	0	1500	0
Stage 1	1480	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	25	354	-	-	443	-
Stage 1	175	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	354	-	-	443	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	175	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	17.7		0		7.1	
HCM LOS	C					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	443	-
HCM Lane V/C Ratio	-	-	0.203	0.167	-
HCM Control Delay (s)	-	-	17.7	14.7	6.8
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0.6	-

Intersection	
Int Delay, s/veh	58

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	65	13	0	24	0	1350	20	37	1497	0
Future Vol, veh/h	6	0	65	13	0	24	0	1350	20	37	1497	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	71	14	0	26	0	1467	22	40	1627	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2441	3196	814	2372	3185	745	1627	0	0	1489	0	0
Stage 1	1707	1707	-	1478	1478	-	-	-	-	-	-	-
Stage 2	734	1489	-	894	1707	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	10	321	18	10	357	396	-	-	447	-	-
Stage 1	95	145	-	132	188	-	-	-	-	-	-	-
Stage 2	378	186	-	302	145	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	1	321	~ 3	1	357	396	-	-	447	-	-
Mov Cap-2 Maneuver	~ 3	1	-	~ 3	1	-	-	-	-	-	-	-
Stage 1	95	10	-	132	188	-	-	-	-	-	-	-
Stage 2	350	186	-	16	10	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 907.3	$ 2717.2	0	6.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	396	-	-	32	8	447	-	-
HCM Lane V/C Ratio	-	-	-	2.412	5.027	0.09	-	-
HCM Control Delay (s)	0	-	-	$ 907.3	$ 2717.2	13.8	6.1	-
HCM Lane LOS	A	-	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	8.9	6.4	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix E

Signal Warrant Analysis Worksheets

CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

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

Standard:

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

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

Guidance:

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

Support:

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

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

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

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

Support:

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

Guidance:

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

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

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

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

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

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

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

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

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

Option:

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

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

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

Support:

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

Option:

17 Engineering study data may include the following:

A. The number of vehicles entering the intersection in each hour from each approach during 12 hours of an average day. It is desirable that the hours selected contain the greatest percentage of the 24-hour traffic volume.

B. Vehicular volumes for each traffic movement from each approach, classified by vehicle type (heavy trucks, passenger cars and light trucks, public-transit vehicles, and, in some locations, bicycles), during each 15-minute period of the 2 hours in the morning and 2 hours in the afternoon during which total traffic entering the intersection is greatest.

C. Pedestrian volume counts on each crosswalk during the same periods as the vehicular counts in Item B and during hours of highest pedestrian volume. Where young, elderly, and/or persons with physical or visual disabilities need special consideration, the pedestrians and their crossing times may be classified by general observation.

D. Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements at the location under study. These persons might not be adequately reflected in the pedestrian volume count if the absence of a signal restrains their mobility.

E. The posted or statutory speed limit or the 85th-percentile speed on the uncontrolled approaches to the location.

F. A condition diagram showing details of the physical layout, including such features as intersection geometrics, channelization, grades, sight-distance restrictions, transit stops and routes, parking conditions, pavement markings, roadway lighting, driveways, nearby railroad crossings, distance to nearest traffic control signals, utility poles and fixtures, and adjacent land use.

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

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

A. Vehicle-hours of stopped time delay determined separately for each approach.
B. The number and distribution of acceptable gaps in vehicular traffic on the major street for entrance from the minor street.
C. The posted or statutory speed limit or the 85th-percentile speed on controlled approaches at a point near to the intersection but unaffected by the control.
D. Pedestrian delay time for at least two 30-minute peak pedestrian delay periods of an average weekday or like periods of a Saturday or Sunday.
E. Queue length on stop-controlled approaches.

Standard:

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

Support:

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

Guidance:

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

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

Support:

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

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

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

Standard:

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

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

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

Option:

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

Guidance:

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

Standard:

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

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

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

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

Option:

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

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

Support:

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

Standard:

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

Option:

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

Section 4C.04 Warrant 3, Peak Hour

Support:

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

Standard:

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

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

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

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

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

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

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

Option:

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

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

Guidance:

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

Section 4C.05 Warrant 4, Pedestrian Volume

Support:

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

Standard:

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

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

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

Option:

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

Standard:

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

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

Guidance:

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

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

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

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

Option:

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

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

Section 4C.06 Warrant 5, School Crossing

Support:

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

Standard:

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

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

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

Guidance:

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

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

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

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

Section 4C.07 Warrant 6, Coordinated Signal System

Support:

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

Standard:

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

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

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

Guidance:

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

Section 4C.08 Warrant 7, Crash Experience

Support:

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

Standard:

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

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

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

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

Option:

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

Section 4C.09 Warrant 8, Roadway Network

Support:

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

Standard:

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

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

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

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

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

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

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

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

Support:

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

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

Guidance:

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

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

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

Standard:

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

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

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

Guidance:

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

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

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

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

Option:

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

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

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

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

Standard:

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

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

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

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

Guidance:

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

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

01 **Standard:**

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

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

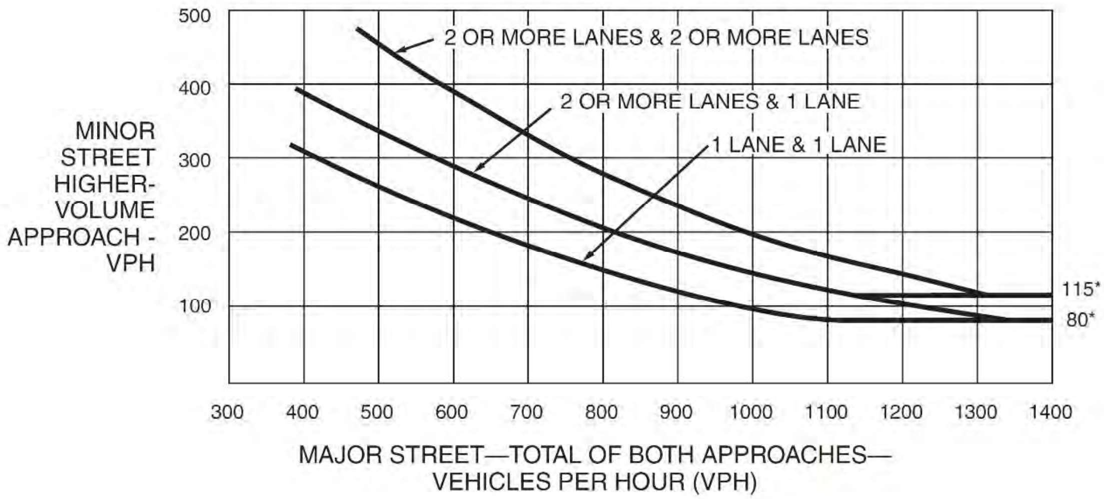
C. If an intersection is signalized under this guideline for school pedestrians, the entire intersection shall be signalized.

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

Option:

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

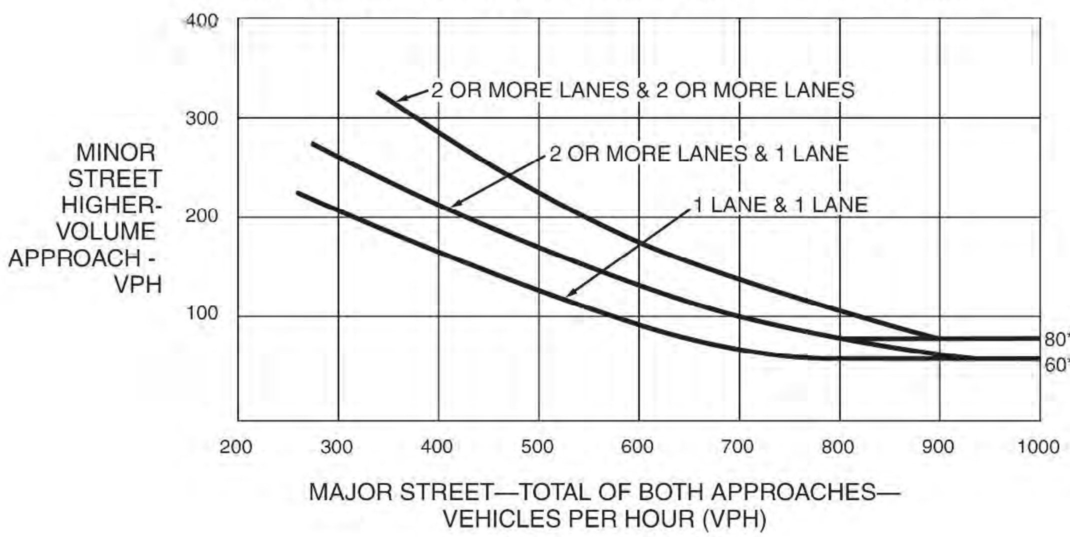
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



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

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

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



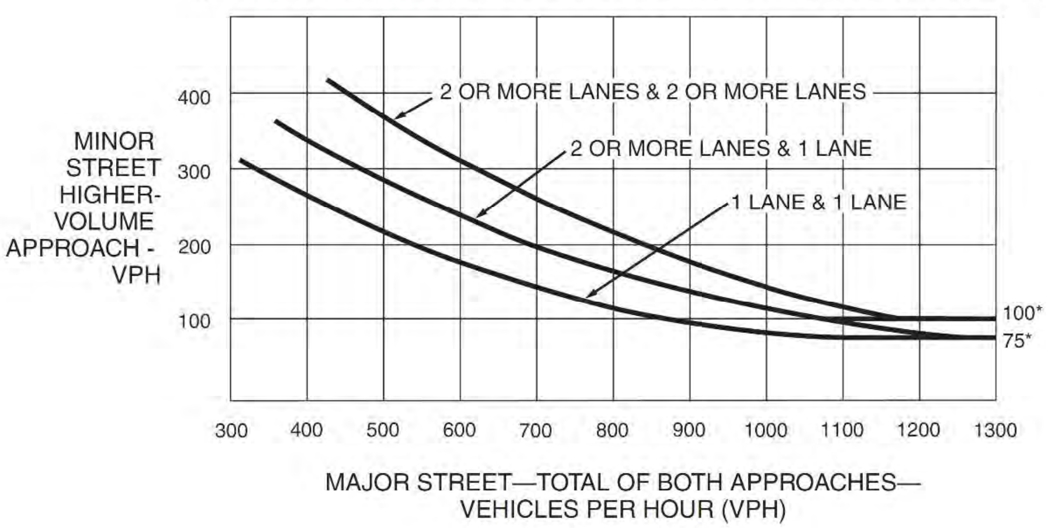
*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-3. Warrant 3, Peak Hour

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

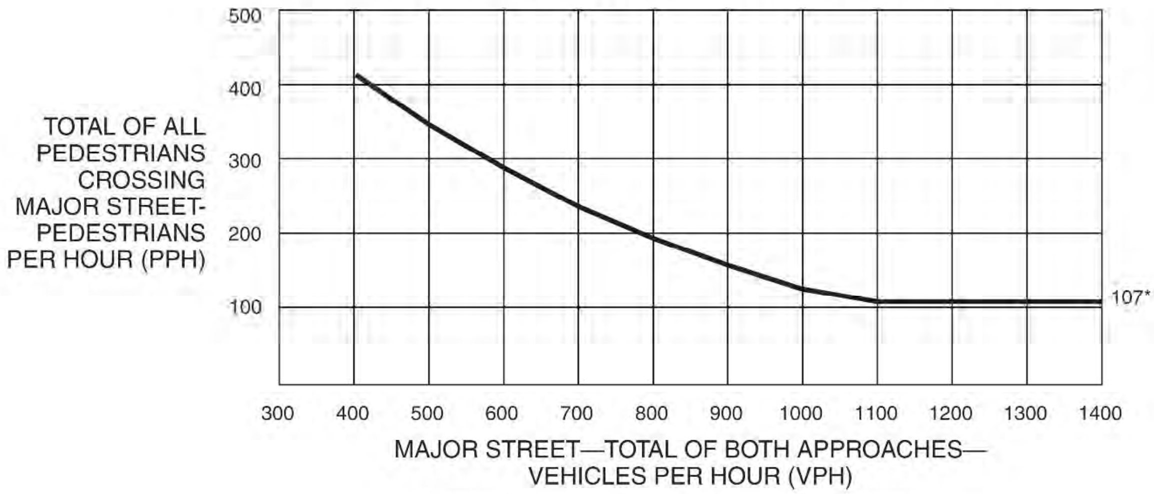
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

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



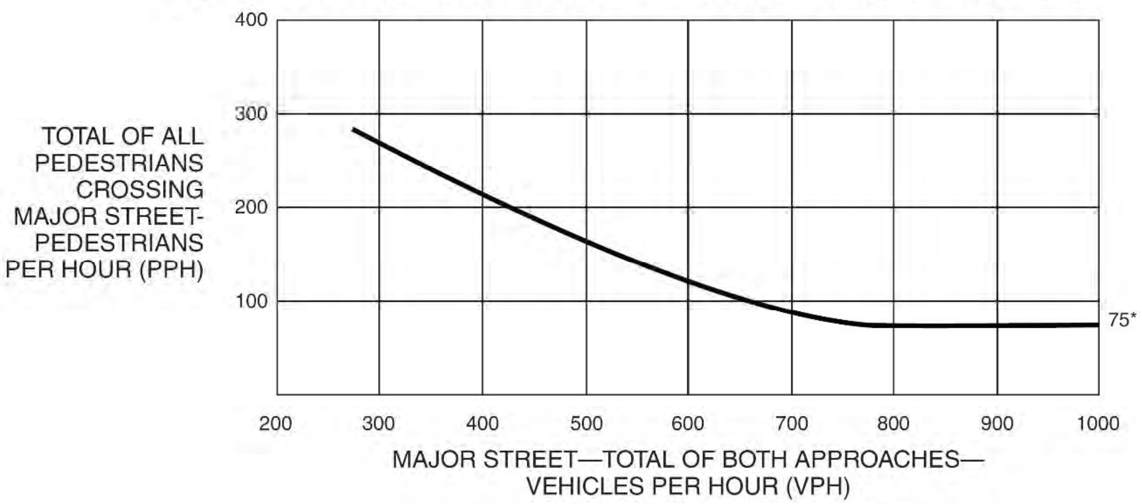
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

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



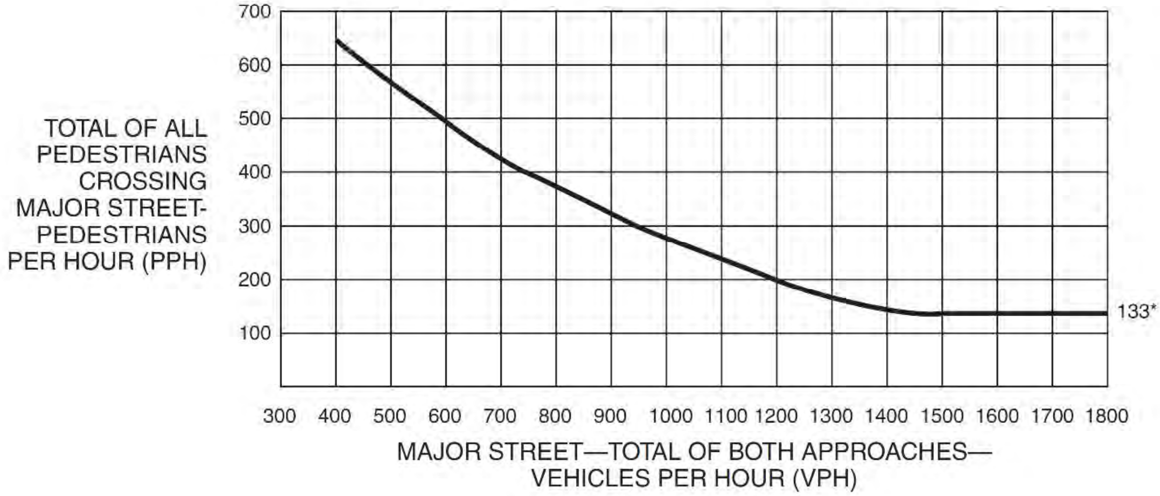
*Note: 107 pph applies as the lower threshold volume.

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



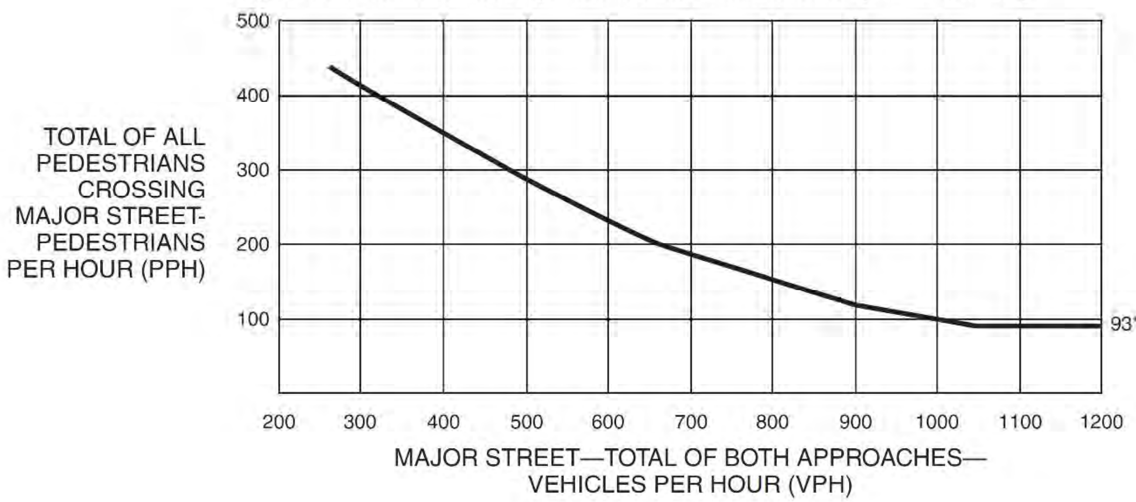
*Note: 75 pph applies as the lower threshold volume.

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



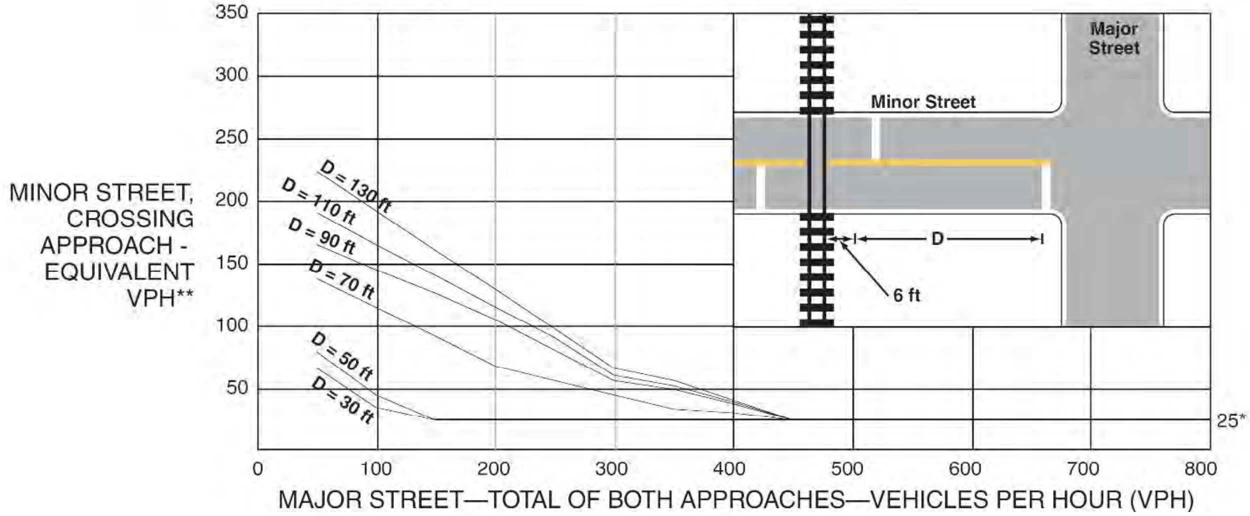
*Note: 133 pph applies as the lower threshold volume.

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



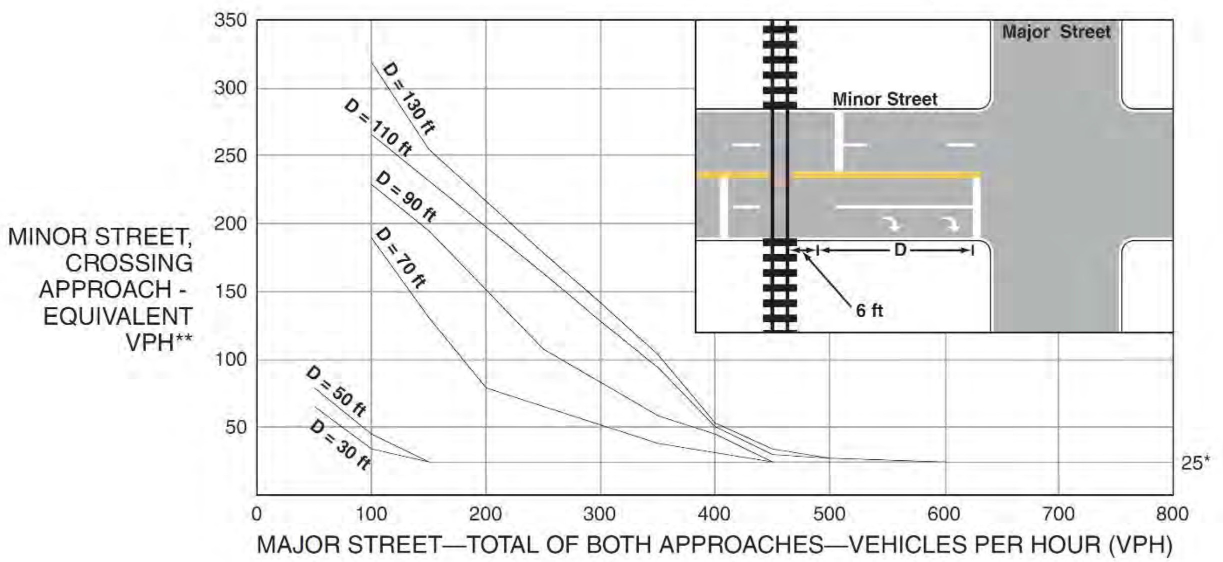
*Note: 93 pph applies as the lower threshold volume.

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

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

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

COUNT DATE 2/25/25
CALC ________ DATE ________
CHK ________ DATE ________

____ DIST ____ CO ____ RTE ____ PM

Major St: Washington Boulevard — Critical Approach Speed 35 mph
Minor St: Prospect Avenue — Critical Approach Speed 25 mph

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

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

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

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)	U	R	U	R	8 AM	3 PM	5 PM	4 PM	7 AM	2 PM	6 PM	11 AM	Hour
APPROACH LANES	1		2 or More										
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)									
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	157	86	84	80	84	54	42	41	

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

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)	U	R	U	R	8 AM	3 PM	5 PM	4 PM	7 AM	2 PM	6 PM	11 AM	Hour
APPROACH LANES	1		2 or More										
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	157	86	84	80	84	54	42	41	

Combination of Conditions A & B SATISFIED YES ☐ NO ☑

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

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

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

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

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

APPROACH LANES	One	2 or More	8 AM	3 PM	5 PM	4 PM (Hour)
Both Approaches - Major Street						
Higher Approach - Minor Street	✓		157	86	84	80

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

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

PART A — SATISFIED YES ☑ NO ☐

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

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

* Future with Project Conditions Year 2045 (PM)

PART B — SATISFIED YES ☐ NO ☑

APPROACH LANES	One	2 or More	8 AM (Hour)
Both Approaches - Major Street			
Higher Approach - Minor Street	✓		157

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

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

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

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

SATISFIED YES ☐ NO ✓

Part 1 (Parts A or B must be satisfied)

	Hours - - ->	8 AM	5 PM	4 M	7 AM
A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours	1	1	1	0

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

	Hours - - ->	8 AM	5 PM	4 M	7 AM
B.	Vehicles per hour for any 1 hour				
	Pedestrians per hour for any 1 hour	1	1	1	0

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

Part 2 **SATISFIED** YES ✓ NO ☐

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

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

SATISFIED YES ☐ NO ✓

Part A
Gap/Minutes and # of Children

SATISFIED YES ☐ NO ☐

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

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

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

Part B **SATISFIED** YES ☐ NO ☐

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

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

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

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

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N 570 ft, S 400 ft, E N/A ft, W 1,340 ft	Yes ☐ No ☑
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning. 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.		Yes ☐ No ☑

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

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

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

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
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.	☐	Yes ☐ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun ______ Veh/Hr	☐	

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

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

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

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

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

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

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

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

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

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